U. S. Department of Agriculture

Forest Service

APPALACHIAN FOREST EXPERIMENT STATION

Technical Note No. 19
Management - Mountains

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RECENT VOLUME TABLES FOR SOME SOUTHERN APPALACHIAN SPECIES

BY

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INDEX TO VOLUME TABLES

Species	Site	National Forest furnishing basic data	Tables by D.B.H. and log lengths: Table Number	Tables by D.B.H. and Av. Merch. Ht.: Number
Chestnut Oak	III	Nantahala	1	1A
White Oak	II	Nantahala	2	2A
White Oak	III	Nantahala	3	3A
N. Red Oak	II	Nantahala	4	4A
Black Oak	II	Nantahala	5	5A
Y. Poplar	II	Nantahala	6	6A
Red Maple	II	Nantahala	7	7A
Basswood	II	Nantahala	8	8A
Shortleaf Pine	II	Nantahala	9	9A
Shortleaf Pine	III	Nantahala	10	10A
Shortleaf Pine	II	Cherokee	11	11A
Shortleaf Pine	III	Cherokee	12	12A
Virginia Pine	II	Cherokee	13	13A
Chestnut	I	Pisgah	14	14A
Chestnut	II	Pisgah	15	15A
Sugar Maple	I	Pisgah	16	16A
White Pine	I	Pisgah	17	17A
Chestnut Oak	II	Cherokee, Nantahala, Pisgah	18	18A
Y. Poplar	I	Cherokee, Nantahala, Pisgah	19	19A
Sc. Oak	III	Nantahala, Cherokee	20	20A
Basswood	I	Pisgah, Nantahala	21	21A
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Black Birch	-	Cherokee, Nantahala, Pisgah and Bland Co., Va.	23	23A

Introduction

The volume tables presented in this technical note are the results of a cooperative project participated in by Forest Service personnel of Region 8 and the Appalachian Forest Experiment Station. Field data were collected by the personnel of the various national forests and computations were carried on by the experiment station with the assistance of men assigned to the project from cooperating forests.

Sufficient data were not available to prepare tables for all of the important commercial species nor were the data adequate for complete sets of site class tables by species. It is expected that additional tables and revisions of the present ones will be made from time to time as necessity indicates and more data are collected.

The present series is being released to fill, partially at least, an immediate need of the U. S. Forest Service, and of other public conservation agencies operating in the region.

Utilization Represented by Tables

Since the original stem measurements were made on going logging operations the volume tables reflect the current utilization and scaling practice on the several national forests and are intended primarily for use on these areas or where similar practices prevail.

In building the tables several departures from conventional utilization standards were used. Actual top diameters as determined by the logger instead of fixed top diameters were used to establish merchantable heights and the gross volumes of individual trees were determined by scaling the logs as cut rather than by the conventional 16 foot log lengths.

The use of actual merchantable top diameters rather than fixed top diameters seems justified because both field observation and examination of the basic data indicate that saw log utilization to a fixed top diameter is not possible in the existing timber stands on southern Appalachian national forests. In the case of hardwoods, it was found that the utilized top diameter, outside bark, when expressed as a percentage of d.b.h., was approximately the same for all diameter classes. This constant percentage relationship has already been reported by Girard[1/] for another region. For the hardwoods, therefore, a single percentage appears to be an adequate expression of top utilization. For example, on Site II the merchantable top diameter, outside bark, of northern red oak was found to average 74.4% of breast high diameter. In terms of averages, the merchantable top, o.b., of 18 inch northern red oaks on Site II would be 0.744 x 18 or 13.4 inches; 36 inch trees would have a merchantable top of 0.774 x 36 or 26.8 inches. Judging from the data at hand, this percentage expression of merchantable top, in the case of hardwoods, appears to be more closely associated with site than with species. In terms of gross averages for the hardwood species, the merchantable top diameters were found to be approximately 68% of d.b.h. on Site I, 74% on Site II and 88% on Site III.

The merchantable top, in terms of percent of d.b.h. for the conifers, was found to be definitely associated with diameter but in no case did the

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1/ Girard, J. W., Volume Tables for Mississippi Bottomland Hardwoods and Southern Pines. Journal of Forestry 31:38. 1933.

extent of this association indicate that the use of a fixed top diameter was advisable. Due to the few coniferous species for which data were available and the fact that the trees of two of the species were second growth, comparisons of top utilization by sites showed no definite trends as was the case with hardwoods. Top utilization in the second growth white pine used to construct Tables 17 and 17A varied from 71% of d.b.h. at 10 inches to 39% of d.b.h. at 30 inches. For the second growth Virginia pine used in making Tables 13 and 13A, utilization ranged from 75% of d.b.h. at 10 inches to 57% at 20 inches. A similar comparison by site classes was possible in the case of shortleaf pine but differences in the top utilization percentages between sites were small and could not be considered significant. An average utilization for this species was found to range from 76% of d.b.h. at 10 inches to 61% at 30 inches.

The gross volume of individual trees was determined by scaling the logs in the lengths cut rather than in 16 foot lengths because in the usual southern Appalachian sawtimber operation the bulk of the logs are cut in short lengths. Analysis of the basic data collected on the three national forests show that 70% of all logs cut were shorter than 16 feet. Volumes given in the tables, therefore, more nearly reflect the actual board foot scale as determined by the general woods practice of the region that would have been the case if scaling had been done by 16 foot log lengths. However, in Tables 1 - 23 merchantable heights are expressed in terms of 16 foot logs for convenience in use.

Considerations in Application of Tables

It will be noted that two series of volume tables are presented. The first series, Tables 1 - 23, are in conventional form and require no explanation other than that already given. They are intended primarily for use where a fair degree of accuracy is required and where field tallies allow the recording of both d.b.h. and estimated merchantable heights.

Tables 1A - 23A were made from the same data as was the original series but give gross and net tree volumes by d.b.h. class and average merchantable height. These tables are intended for comparatively rough approximations of volume in extensive work where field tallies omit the consideration of height and only breast high diameters are recorded.

In this second series, average merchantable heights (column 2) and defect percentages (column 4) were obtained by the use of fitted free hand curves. For certain species the data were not adequate for highly satisfactory expressions of these relationships. This is reflected in the somewhat high aggregate differences shown for several of the tables.

Although the defect percentages and consequently the net volumes may be adequate for the immediate localities in which the basic data were gathered it is known that defect varies widely with locality and is dependent largely on the past fire history of individual stands.[2/] Therefore the field man should make every effort to revise these tables in accordance with additional local experience.

It is also urged that in cases where the average merchantable heights shown in column 2 do not correspond with local utilization a new curve be drawn from local data. Diameter and new merchantable height data can then be substituted in the basic formula given with each table and new gross volumes can be computed. These can in turn be reduced by the application of local defect data.

2/ Hepting, George H. and Hodgcock, George G., Relation Between Butt Rot and Fire in Some Eastern Hardwoods. Appalachian Forest Experiment Station

RS - AP
M-1
(S-Timber Surveys)

TABLE 1 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths							
	½	1	1½	2	2½	3	3½	
10	2	3	4					
12	3	4	6	7				
14	4	7	9	11	13			
16	6	10	13	16	18	21		
18	8	13	17	21	25	29		
20	10	17	23	28	33	38	42	
22	13	22	30	36	43	49	54	
24	17	28	37	46	54	61	68	
26	21	34	46	56	66	76	84	
28	25	42	56	68	80	92	103	
30	30	50	67	82	97	110	123	
32	36	59	79	97	114	130	146	
34	42	70	93	115	135	154	172	
36	49	81	108	133	156	178	199	
38		93	125	154	180	206	230	Computed by BF
40		106	143	176	206	235	263	Checked by
42			162	199	234	267	298	CRR

Block indicates extent of basic data

Aggregate difference: Table 0.24% high
Average individual deviation: 10.7%

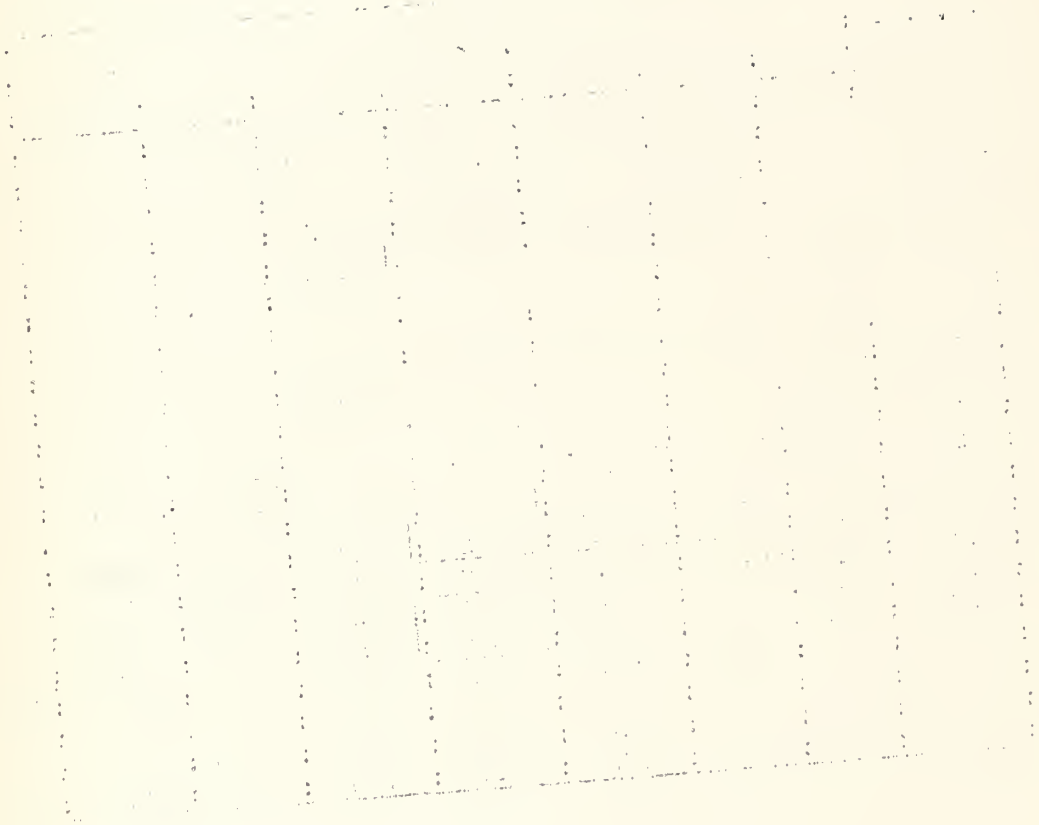
Based on 71 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.635 (log. d.b.h., inches) + 0.721 (log. merch.ht.ft.) - 2.062

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. Volume = 2.635 (log. 54) + 0.721 (log. 48) - 2.062
V = 2.635 (1.732) + 0.721 (1.681) - 2.062
V = 4.564 + 1.212 - 2.062 = 3.714, Antilog. is 5,176 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



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(S-Timber Surveys)

TABLE 2 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE II

Nantahala National Forest
Trees over 75 years old
Utilization: 1 ft. stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths								
	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	
10	2	3	4	5					
12	4	5	7	8					
14	5	8	10	12	14	15			
16	7	10	14	17	19	22			
18		15	19	23	26	29	32		
20		20	25	30	34	38	42		
22		25	32	38	44	49	54		
24		31	40	48	54	61	67	73	
26		38	49	58	67	75	82	89	
28		46	59	70	81	90	99	108	
30		55	71	84	96	108	119	128	
32		65	83	99	114	127	140	153	
34			98	116	133	149	164	178	
36			112	134	154	172	189	205	
38			129	154	177	198	217	236	
40			147	176	201	225	248	268	
42			167	199	228	255	280	304	Table by BF
44				225	258	288	317	344	Checked by JHS
46				252	288	323	355	385	
48				280	321	359	394	428	

Block indicates extent of basic data
Aggregate difference in Bd. Ft. Table 0.24% low
Average Individual Deviation: 13.6%

Based on 88 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.558 (log. D.B.H. inches) + .612 (log. merch.ht.ft.)-1.774

Table can be extended by formula as follows:
Example = Volume is desired for 3 log, 54 inch trees.

Log. Vol. = 2.558 (log. 54") + .612 (log. 48') - 1.774
V = 2.558 (1.732) + .612 (1.681) - 1.774
V = 4.450 + 1.029 - 1.774 = 3.685, Antilog. is 4,842 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - Jan. 1936.

RS - AP
M-1
(S-Timber Surveys)

TABLE 3 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths				
	½	1	1½	2	2½
10	2	3	4		
12	3	5	6	8	
14	4	7	10	12	14
16	6	10	14	17	20
18	8	14	19	23	27
20		19	25	31	36
22		24	32	39	46
24		30	41	50	58
26		38	50	62	72
28		46	62	76	88
30		56	74	91	106
32		66	88	108	126
34			104	128	150
36			121	148	173
38			140	172	201

Computed by JHS
Checked by CRR

Block indicates extent of basic data

Aggregate Difference: Table 0.40% high
Average Individual Deviation: 11.6%

Based on 93 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log.Volume = 2.688 (log.d.b.h.,inches) + 0.709 (log.merch.ht.,ft.) - 2.079

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:

Log.Volume = 2.688 (log.54) + 0.709 (log.48) - 2.079
V = 2.688 (1.732) + 0.709 (1.681) - 2.079
V = 4.656 + 1.192 - 2.079 = 3.769, Antilog. is 5,861 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

RS - AP
M-1
(S-Timber Surveys)

TABLE 4 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II
Nantahala National Forest.

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths. ½	1	1½	2	2½	3	3½	4
10	2	3	4	5				
12	3	5	6	8	9			
14	4	7	10	12	14	15		
16	6	10	13	16	19	21		
18		13	18	21	25	28	31	
20		17	25	28	32	37	41	45
22		22	29	35	41	46	51	56
24		27	36	43	51	57	64	70
26		33	44	53	62	70	78	85
28		39	52	63	74	84	93	102
30			62	75	88	99	110	121
32			72	88	103	116	129	142
34			84	103	120	136	151	165
36			96	118	137	155	173	189
38			110	135	157	178	198	216
40			125	152	177	201	224	245
42			141	171	200	226	252	276
44				193	225	255	284	310
46				215	251	284	316	346
48				238	278	315	350	383

Computed by CRR
Checked by JHS

Block indicates extent of basic data

Aggregate difference: Table 0.34% low
Average individual deviation: 9.91%

Based on 129 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.456 (log. d.b.h., inches) + 0.686 (log. merch. ht. ft.) - 1.784

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:

Log. Volume = 2.456 (log. 54) + 0.686 (log. 48) - 1.784
V = 2.456 (1.732) + 0.686 (1.681) - 1.784
V = 4.254 + 1.153 - 1.784 = 3.623, Antilog. is 4198 bd. ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

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M-1
(S-Timber Surveys)

TABLE 5 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths								
	½	1	1½	2	2½	3	3½	4	
10	2	3	4	5					
12	3	5	6	8	10				
14	4	7	10	12	14	16	18		
16	6	10	13	17	20	23	25		
18		13	18	22	26	30	34	38	
20		17	23	29	34	40	44	49	
22		22	29	37	44	50	56	62	
24		27	37	46	54	62	70	78	
26			45	56	66	76	86	95	
28			54	67	80	92	103	114	
30			64	80	95	109	122	136	
32			75	94	111	128	144	160	
34			88	110	130	149	168	186	
36			101	126	149	172	193	214	
38			116	144	171	197	222	246	
40			131	164	194	224	252	279	Computed by BF
42			148	185	219	252	284	315	Checked by CRR
44				209	248	285	320	355	

Block indicates extent of basic data

Aggregate difference: Table 0.94% low
Average individual deviation: 12.0%

Based on 79 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. volume = 2.500 (log. d.b.h., inches) + 0.767 (log. merch. ht. ft.) - 1.945

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. Volume = 2.500 (log. 54) + 0.767 (log. 48) - 1.945
V = 2.500 (1.732) + 0.767 (1.681) - 1.945
V = 4.330 + 1.289 - 1.945 = 3.674, antilog. is 4,721 bd. ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936

RS - AP
M-1
(S-Timber Surveys)

TABLE 6 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.								
	1	1½	2	2½	3	3½	4	4½	
10	3	4	6	7					
12	5	7	9	10					
14	7	10	12	15	18	20			
16	10	14	17	21	24	28			
18		18	23	28	32	37	41		
20		23	30	36	42	47	53		
22			37	45	52	59	66		
24			46	56	65	73	82		
26			56	67	78	89	100	110	
28			67	81	94	107	119	131	
30				95	111	126	141	155	
32				111	129	147	164	182	
34				129	151	171	191	211	
36				148	172	195	219	241	
38				169	197	223	250	275	
40				191	222	253	282	311	
42				215	250	284	318	350	Computed
44					280	319	356	393	by BF
46					312	355	396	438	Checked
48					345	393	438	483	By JHS

Block indicates extent of basic data

Aggregate difference: Table 0.64% low
Average individual deviation: 9.7%

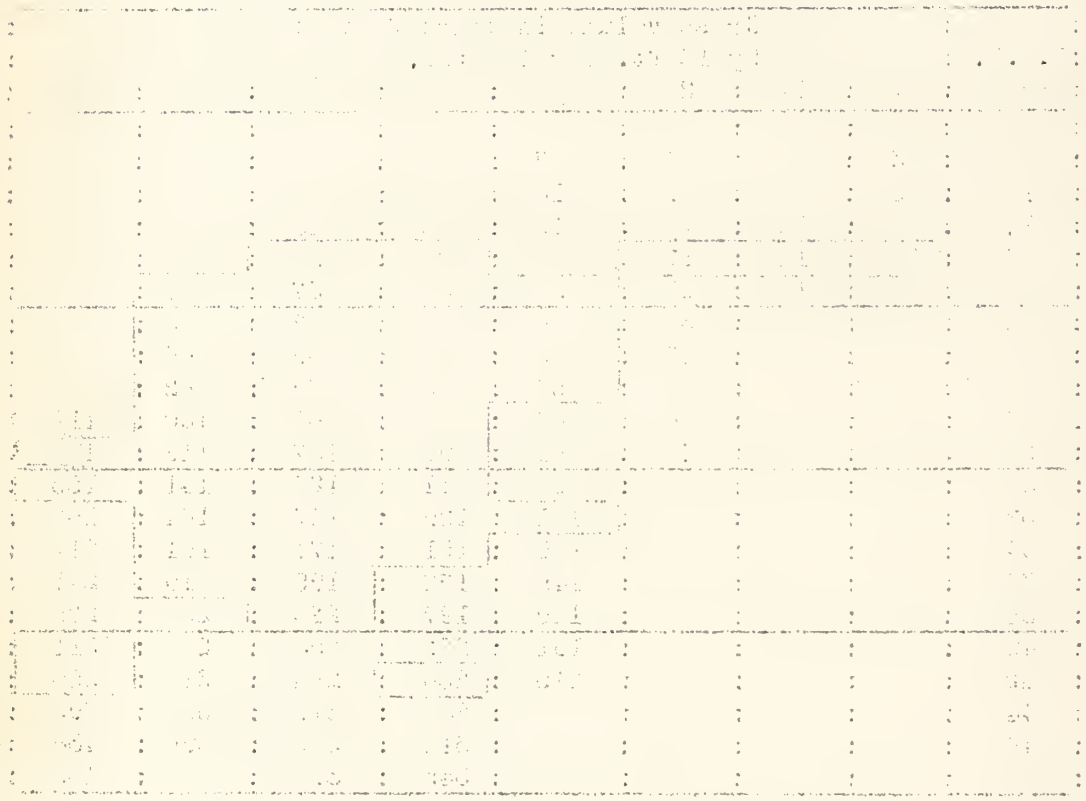
Based on 86 stem measurements from which the following logarithmic formula was derived and used to construct the table:

Log.Volume = 2.417 (log.d.b.h.,inches) + 0.831 (log.merch.ht.ft.) - 1.922

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. volume = 2.417 (log. 54) + 0.831 (log. 48) - 1.922
V = 2.417 (1.732) + 0.831 (1.681) - 1.922
V = 4.186 + 1.397 - 1.922 = 3.661, Antilog. is 4,581 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



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M-1
(S-Timber Surveys)

TABLE 7 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.								
	½	1	1½	2	2½	3	3½	4	
10	2	3	5	6					
12	3	5	7	9					
14	5	8	10	12	14	16			
16	6	10	14	17	20	22			
18		14	18	22	26	29	33		
20		17	23	28	33	38	42		
22		22	29	35	42	47	53		
24		27	36	44	51	58	65		
26			43	53	62	70	78	86	
28			51	62	73	83	93	102	
30			60	73	86	98	109	120	
32			70	86	100	114	127	139	
34				99	116	132	147	161	
36				113	132	150	167	184	
38				128	150	172	190	209	
40				145	169	192	214	236	Computed by BF
42				162	190	216	240	264	
44				182	212	242	269	296	Checked by JHS

Block indicates extent of basic data

Aggregate difference: Table 0.70% low
Average individual deviation: 12.9%

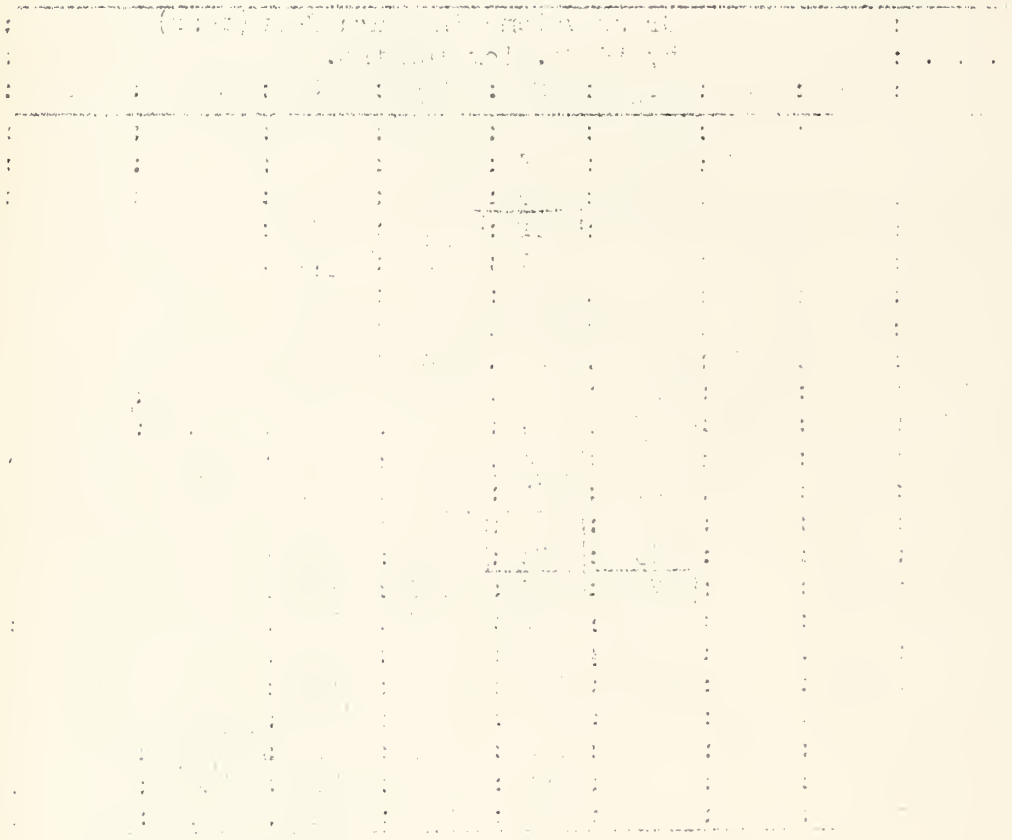
Based on 75 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.349 (log. d.b.h., inches) + .705 (log. merch.ht.ft.) - 1.664

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees
Log. Volume = 2.349 (log. 54) + .705 (log. 48) - 1.664
V = 2.349 (1.732) + .705 (1.681) - 1.664
V = 4.068 + 1.185 - 1.664 = 3.589 or Antilog. is 3882 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



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M-1
(S-Timber Surveys)

TABLE 8 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II
Nantahala National Forest.

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tons) by 16 ft. log lengths.									
	½	1	1½	2	2½	3	3½	4	4½
10	2	3	4	6	7					
12	3	5	7	9	10					
14	4	7	10	13	15	17				
16		10	14	17	21	24				
18		13	18	23	27	32	36			
20		17	24	30	35	41	46	51		
22		21	30	37	44	51	58	64	71	
24		26	36	46	55	63	71	79	87	
26		32	44	56	66	77	87	96	106	
28			53	66	79	92	104	115	126	
30			62	78	94	108	122	136	149	
32			73	91	109	126	143	158	174	
34			84	106	127	147	166	184	202	
36			96	121	145	168	189	210	231	
38			110	138	165	191	216	240	264	
40			124	156	187	216	244	272	298	

Computed by CRR
Block indicates extent of basic data Checked by JHS

Aggregate difference: Table 1.36% low
Average individual deviation: 9.79%

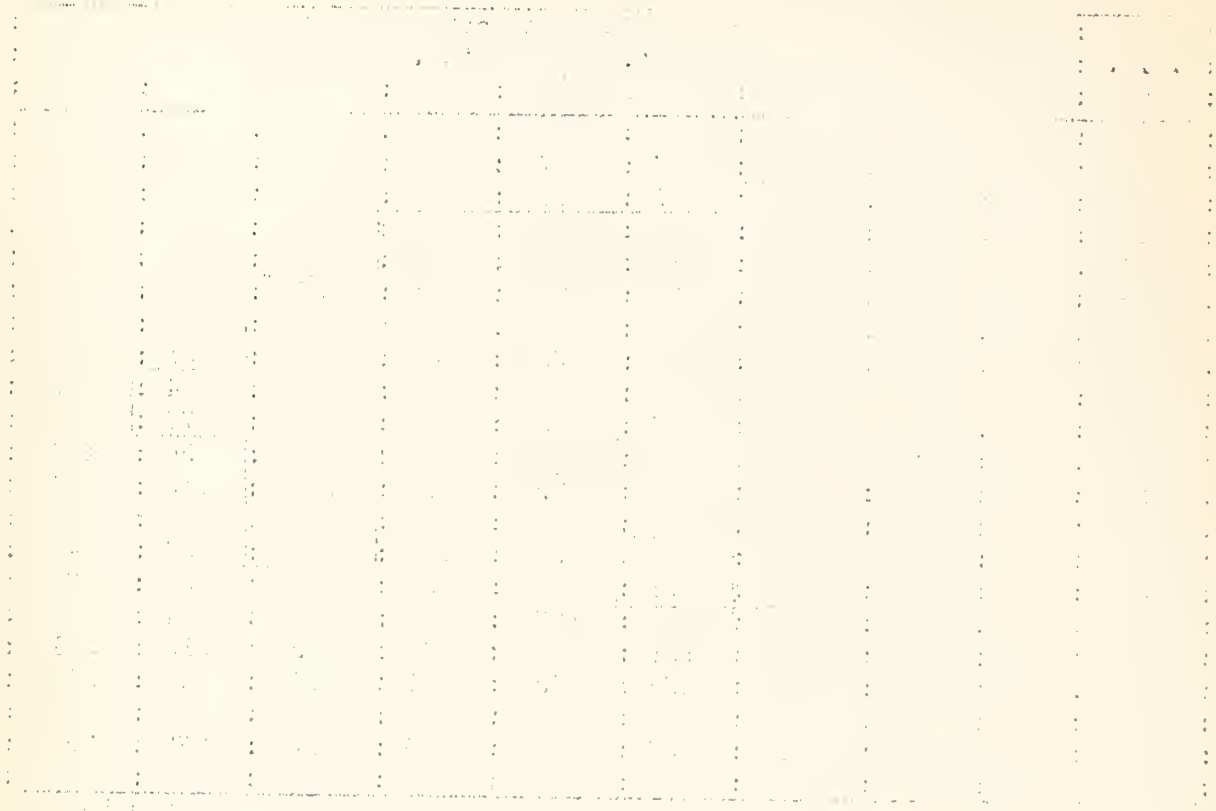
Based on 92 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.402 (log. d.b.h., inches) + 0.796 (log. merch. ht. ft.) - 1.852

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54-inch trees.
Log. Volume = 2.402 (log. 54) + 0.796 (log. 48) - 1.852
V = 2.402 (1.732) + 0.796 (1.681) - 1.852
V = 3.646 = Volume of 4426 bd. ft. (Antilog. of 3.646)

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



RS - AP
M-1
(S-Timber Surveys)

TABLE 9 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.									
	½	1	1½	2	2½	3	3½	4	4½	5
10	2	3	4	6						
12	3	5	7	9	11					
14	4	7	10	12	15	18	20			
16		9	13	17	21	24	28	31		
18		12	17	22	27	32	37	41	46	
20		16	22	29	35	41	47	53	58	64
22		19	28	36	44	51	58	66	73	80
24			34	44	53	62	72	80	89	98
26			41	53	64	76	86	97	108	118
28			49	63	76	90	103	115	128	140
30			57	74	90	105	120	136	150	165
32			66	86	104	122	140	157	175	191
34			77	99	120	141	162	182	201	221
36			87	112	137	161	184	207	229	252

(Computed by CRR
(Checked by JHS

Block indicates extent of basic data

Aggregate difference: Table 1.06% low
Average individual deviation: 10.69%

Based on 97 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.326 (log. d.b.h., inches) + 0.880 (log. merch. ht., ft.) - 1.893

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. volume = 2.326 (log. 54) + 0.880 (log. 48) - 1.893
V = 2.326 (1.732) + 0.880 (1.681) - 1.893
V = 4.029 + 1.479 - 1.893 = 3.615, Antilog. is 4,121 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

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TABLE 10 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths						
	½	1	1½	2	2½	3	3½
10	2	3	5	6			
12	3	5	7	9	11		
14	4	7	10	13	15	18	
16	5	10	14	17	21	24	
18		13	18	23	27	32	37
20		16	23	29	35	41	47
22		20	28	36	44	51	58
24			34	44	53	62	71
26			42	53	64	75	86
28			49	63	76	89	101
30				74	89	104	119
32				86	104	121	138

Computed by CRR
Checked by BF

Block indicates extent of basic data

Aggregate difference: Table 2.14% low
Average individual deviation: 13.31%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.311 (log. d.b.h., inches) + 0.852 (log. merch.ht.ft.) - 1.827

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. Volume = 2.311 (log. 54) + 0.852 (log. 48) - 1.827
V = 2.311 (1.732) + 0.852 (1.681) - 1.827
V = 4.003 + 1.432 - 1.827 = 3.608, Antilog. is 4,055 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936

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TABLE 11 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II
Cherokee National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths										
	½	1	1½	2	2½	3	3½	4	4½	5	5½
10	2	3	4	6	7						
12	3	5	7	9	10	12	14	15			
14	4	8	10	13	16	18	21	23	25		
16		10	15	18	22	25	29	32	36		
18		14	20	25	30	35	39	44	48	52	
20		19	26	33	39	46	52	57	63	69	
22		24	33	42	50	58	66	73	81	88	95
24			42	52	63	73	82	92	101	110	119
26			51	65	77	90	101	113	124	136	146
28			62	78	94	108	123	137	150	164	177
30			74	93	112	129	147	163	180	196	211
32				110	132	153	173	193	212	231	250
34				129	155	180	203	226	249	271	293
36				149	179	207	234	261	287	313	338

(Computed by BF
(Checked by CRR

Block indicates extent of basic data

Aggregate difference: Table 1.11% low
Average individual deviation: 11.3%

Based on 135 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.579 (log.d.b.h.,inches) + 0.809 (log.merch.ht.,ft.) - 2.057

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees.
Log.Volume = 2.579 (log.54) + 0.809 (log.48) - 2.057
V = 2.579 (1.732) + 0.809 (1.681) - 2.057
V = 4.467 + 1.360 - 2.057 = 3.770, antilog.is 5,888 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

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TABLE 12 - BOARD FOOT VOLUME TABLE - SCRIBER DEC. C. RULE

SHORTLEAF PINE - SITE III
Cherokee National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths								
	½	1	1½	2	2½	3	3½	4	
10	2	3	4	5					
12	3	5	7	9	10				
14	4	7	10	13	16	18			
16	6	11	15	18	22	26	29		
18		14	20	25	30	35	40	44	
20		19	27	34	40	46	52	58	
22		25	34	43	51	59	67	75	
24		31	43	54	65	75	85	94	
26		38	53	67	80	93	105	117	
28			65	82	98	113	128	142	
30			78	98	117	136	154	171	
32			92	116	139	161	182	203	Computed by CRR
34				137	164	190	215	239	Checked by BF
36				158	190	220	248	277	

Block indicates extent of basic data

Aggregate difference: Table is 0.3% low
Average individual deviation: 11.96%

Based on 83 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.650 (log. d.b.h., inches) + 0.802 (log. merch. ht. ft.) - 2.130

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. Volume = 2.650 (log. 54) + 0.802 (log. 48) - 2.130
V = 2.650 (1.732) + 0.802 (1.681) - 2.130
V = 4.590 + 1.348 - 2.130 = 3.808, Antilog. is 6,427 bd. ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

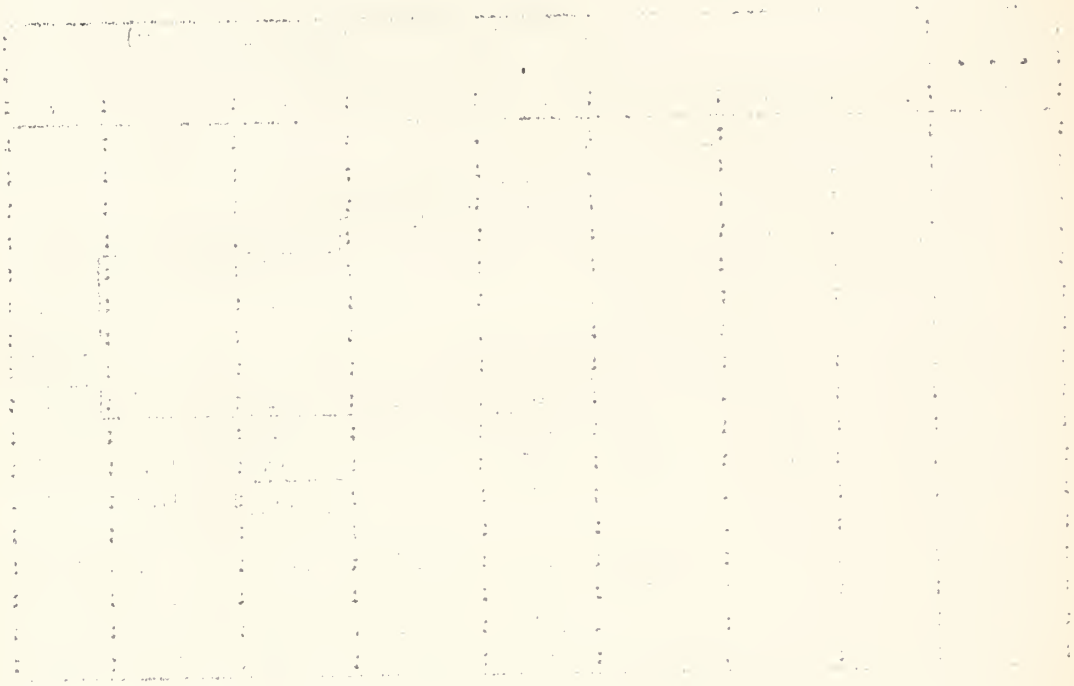

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TABLE 13 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II
Cherokee National Forest

Trees under 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.								
	½	1	1½	2	2½	3	3½	4
8	1	2	2					
10	2	3	4	5	6	7		
12	3	5	7	8	10	11	13	
14	4	7	10	12	14	16	18	20
16	6	10	13	16	20	22	25	28
18	8	13	18	22	26	30	33	37
20	10	17	23	28	33	38	43	48
22		21	28	35	42	48	54	60
24		26	35	44	52	59	67	74

Computed by BF
Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 1.44% low
Average individual deviation: 10.5%

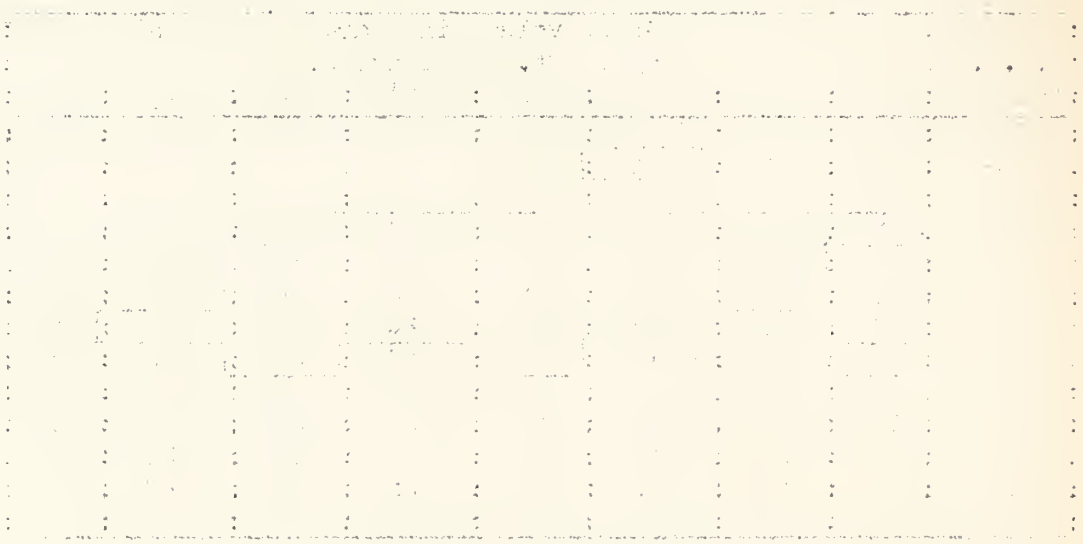
Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct the table:

Log. Volume = 2.404 (log. d.b.h., inches) + 0.762 (log. merch. ht. ft.) - 1.825

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 36 inch trees:
Log. volume = 2.404 (log. 36) + 0.762 (log. 48) - 1.825
V = 2.404 (1.556) + 0.762 (1.681) - 1.825
V = 3.741 + 1.281 - 1.825 = 3.197, Antilog. is 1,574 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through the inclusion of additional data.

Leonard I. Barrett - January 1936



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(S-Timber Surveys)

TABLE 14 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I

Pisgah National Forest.

Trees over 75 years old.

Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.										
	½	1	1½	2	2½	3	3½	4	4½	5
10	2	3	4	5							
12	2	4	6	7	9						
14	4	6	8	10	12	14					
16	5	8	11	14	17	19	22				
18	6	11	15	18	22	25	29	32			
20		14	19	23	28	32	36	40			
22		17	23	29	34	40	45	50	55		
24		20	28	35	42	48	55	61	67		
26		24	34	42	50	58	66	73	80	87	
28			40	50	60	69	78	86	95	103	
30			46	58	70	80	91	101	111	120	
32			54	67	80	93	105	117	128	139	
34			62	78	93	107	121	134	148	160	
36				88	105	121	137	152	167	182	
38				100	119	137	155	173	189	206	
40				112	134	154	174	194	212	231	
42				125	149	172	194	216	237	258	
44				139	166	192	217	241	264	288	
46				154	184	212	239	266	292	318	
48					201	233	263	292	321	348	
50					221	256	288	321	352	383	
52					242	279	316	351	385	419	
54					263	303	343	381	418	455	
56					286	330	372	414	455	494	
58					309	356	403	448	492	535	
60					334	386	436	484	532	578	

Block indicates extent of basic data

(Computed by CRR
(Checked by BF

Aggregate difference: Table is 1.41% high
Average individual deviation: 12.56%

Based on 214 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log.Volume = 2.263 (log.d.b.h.,inches) + 0.791 (log. merch.ht.ft.) - 1.767

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 64 inch trees:

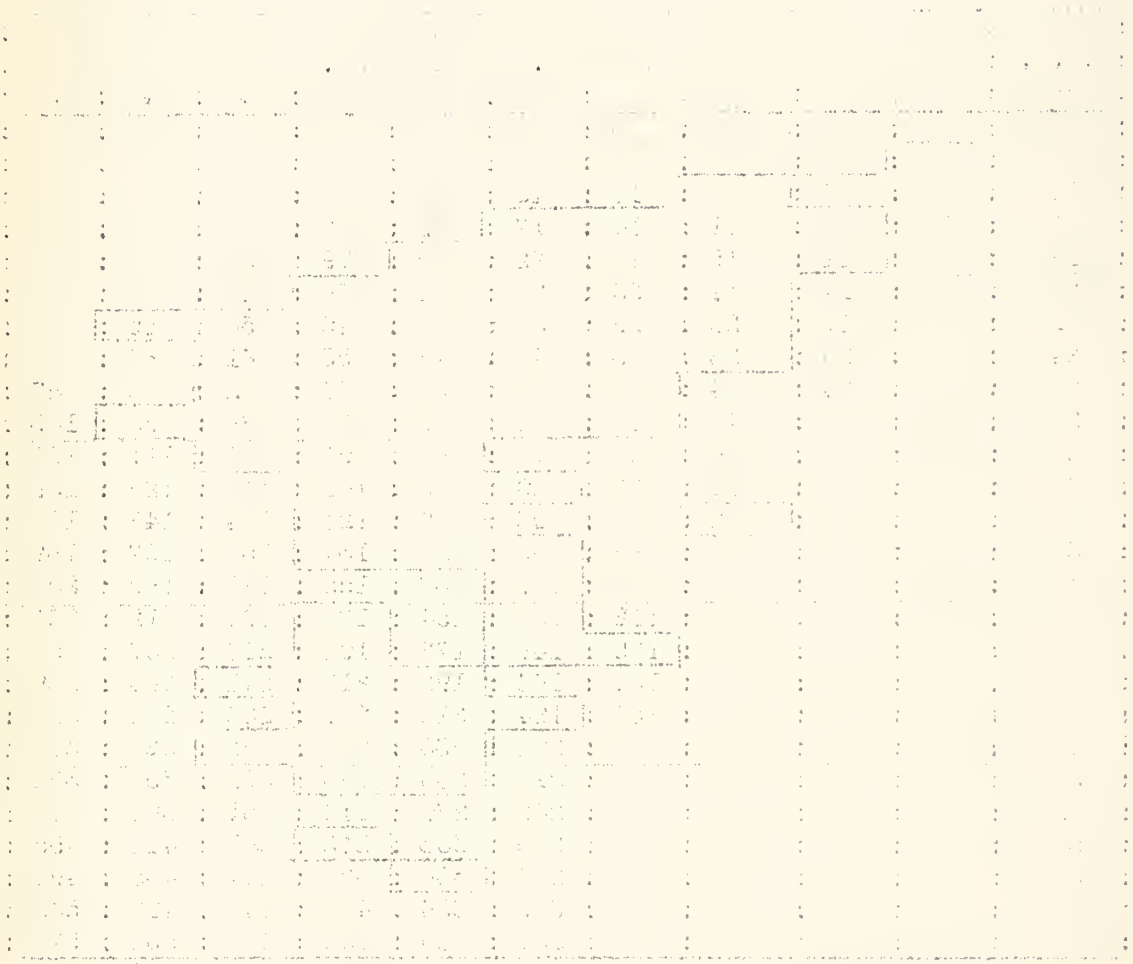
Log Volume = 2.263 (log.64) + 0.791 (log.48) - 1.767

V = 2.263 (1.806) + 0.791 (1.681) - 1.767

V = 4.087 + 1.330 - 1.767 = 3.650, Antilog. is 4,467 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R. 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936



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(S-Timber Surveys)

TABLE 15 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II
Pisgah National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.								
	½	1	1½	2	2½	3	3½	4	
10	2	3	4	4					
12	2	4	6	7	8				
14	4	6	8	10	12	13			
16	5	8	11	14	16	18			
18		11	14	18	21	24	27		
20		14	18	23	27	31	34	38	
22		17	23	28	34	38	43	47	
24		21	28	35	41	47	52	58	
26			34	42	50	57	63	70	
28			41	50	59	67	75	83	
30			48	59	70	79	89	98	
32			56	69	81	92	103	114	
34			65	80	94	107	120	132	
36				91	107	122	136	150	
38				103	122	139	155	171	
40				116	137	156	175	192	
42				130	153	175	196	216	Computed
44				146	172	196	220	242	by CRR
46				162	191	218	243	268	Checked
48				179	210	240	268	296	by BF

Block indicates extent of basic data

Aggregate difference: Table 1.91% high
Average individual deviation: 12.97%

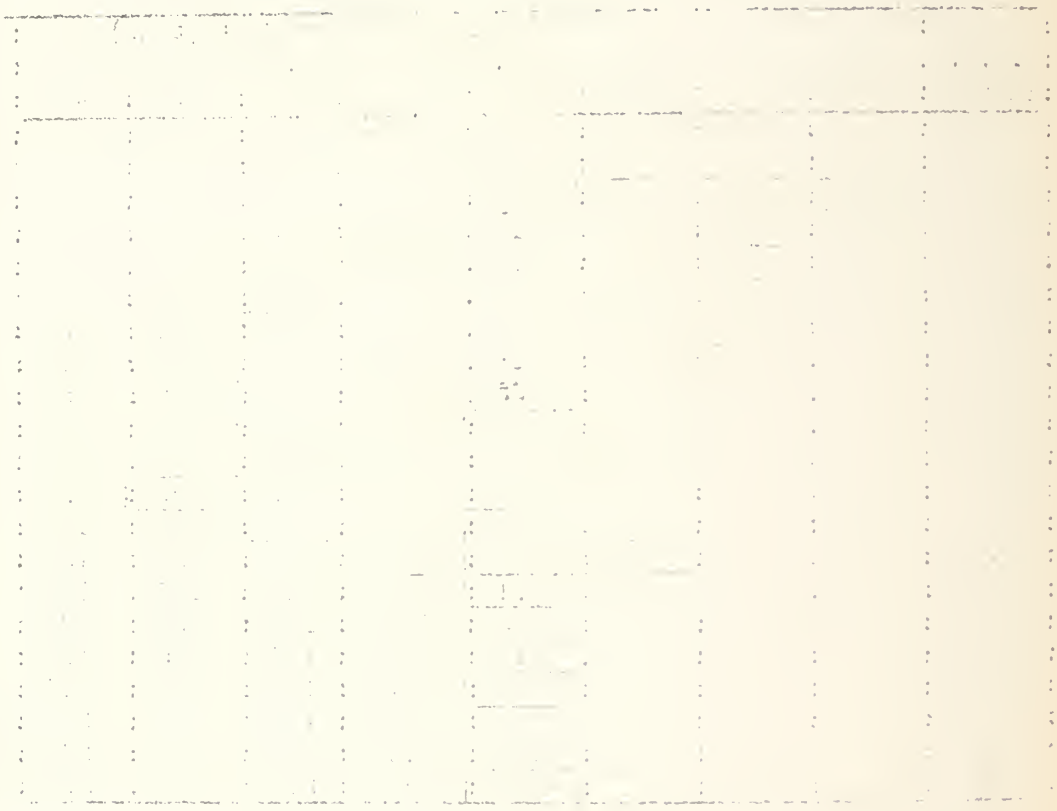
Based on 91 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.354 (log. d.b.h., inches) + 0.725 (log. merch.ht.ft.) - 1.796

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. volume = 2.354 (log. 54) + 0.725 (log. 48) - 1.796
V = 2.354 (1.732) + 0.725 (1.681) - 1.796
V = 4.077 + 1.219 - 1.796 = 3.500, Antilog. is 3,162 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



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(S-Timber Surveys)

TABLE 16 - BOARD FOOT VOLUME TABLES - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I
Pisgah National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 foot log lengths.								
	½	1	1½	2	2½	3	3½	4	
10	2	3	4						
12	3	5	6	8					
14	4	7	9	11	12				
16	6	9	12	14	16	18			
18		12	15	18	21	24	26		
20		15	19	23	27	30	33	36	
22		18	24	28	33	37	41	45	
24			28	34	40	45	50	54	
26			34	41	47	54	59	65	
28			40	48	56	63	70	76	
30			46	56	65	73	81	88	
32			54	65	75	84	93	102	
34			61	74	86	96	107	116	
36				84	97	109	120	131	
38				94	109	123	136	148	
40				105	122	137	152	166	
42					136	152	169	184	Computed
44					151	169	188	205	by CRR
46					166	187	206	225	Checked
48					182	204	226	247	by JHS

Block indicates extent of basic data

Aggregate difference: Table 1.60% low
Average individual deviation: 17.7%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.189 (log. d.b.h., inches) + 0.653 (log. mech. ht. ft.) - 1.467

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:
Log. Volume = 2.189 (log. 54) + 0.653 (log. 48) - 1.467
V = 2.189 (1.732) + 0.653 (1.681) - 1.467
V = 3.791 + 1.098 - 1.467 = 3.422, Antilog. is 2,642 bd. ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

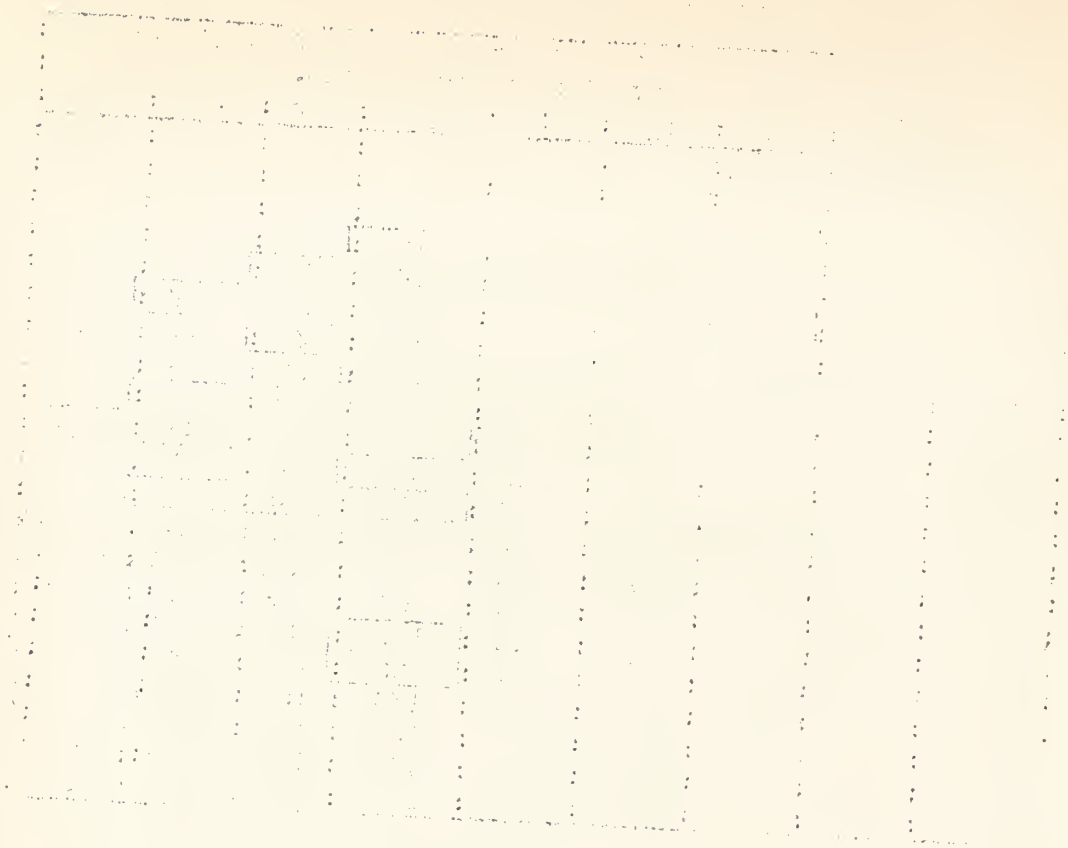

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TABLE 17 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I
Pisgah National Forest

Trees under 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths. 1	1½	2	2½	3	3½	4
10	3	4	5				
12	4	6	7	8			
14	5	8	10	12	14	16	
16	7	10	13	16	18	21	24
18	9	13	17	20	24	27	31
20		16	21	26	30	34	38
22		20	26	31	37	42	47
24		24	31	38	44	51	57
26		29	37	45	52	60	67
28		34	43	52	61	70	79
30			50	61	71	82	92
32			57	70	82	94	105
34				80	93	107	120
36				90	105	120	135

Computed by CRR
Checked by BF

Block indicates extent of basic data

Aggregate difference: Table 0.34% low
Average individual deviation: 12.34%

Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.142 (log. d.b.h., inches) + 0.875 (log. merch. ht. ft.) - 1.782

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees:

Log. Volume = 2.142 (log. 54) + 0.875 (log. 48) - 1.782
V = 2.142 (1.732) + 0.875 (1.681) - 1.782
V = 3.710 + 1.471 - 1.782 = 3.399, Antilog. is 2,506 bd. ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

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(S-Timber Surveys)

TABLE 18 - BOARD FOOT VOLUME TABLE - SCRIBNER D.C. C. RULE

CHESTNUT OAK - SITE II
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tons) by 16 ft. log lengths.							
	½	1	1½	2	2½	3	3½	4
10	2	3	3					
12	3	4	5	6				
14	4	6	8	10	11	13		
16	6	9	12	14	16	18	20	
18	8	12	16	19	22	25	27	30
20	10	16	21	25	29	33	36	39
22	13	21	27	32	37	42	46	50
24	17	26	34	41	47	53	58	64
26		33	42	51	58	66	72	79
28		40	51	62	71	80	88	96
30		48	62	74	85	96	106	115
32		56	73	88	101	114	125	136
34		66	86	103	119	134	148	161
36			100	120	138	155	171	186
38			115	139	160	180	198	215
40			132	158	183	205	226	247
42			150	180	208	233	257	280
44				205	236	265	292	318

Computed by CRR
Checked by BF

Block indicates extent of basic data

Aggregate difference: Table 0.25% high
Average individual deviation: 13.81%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

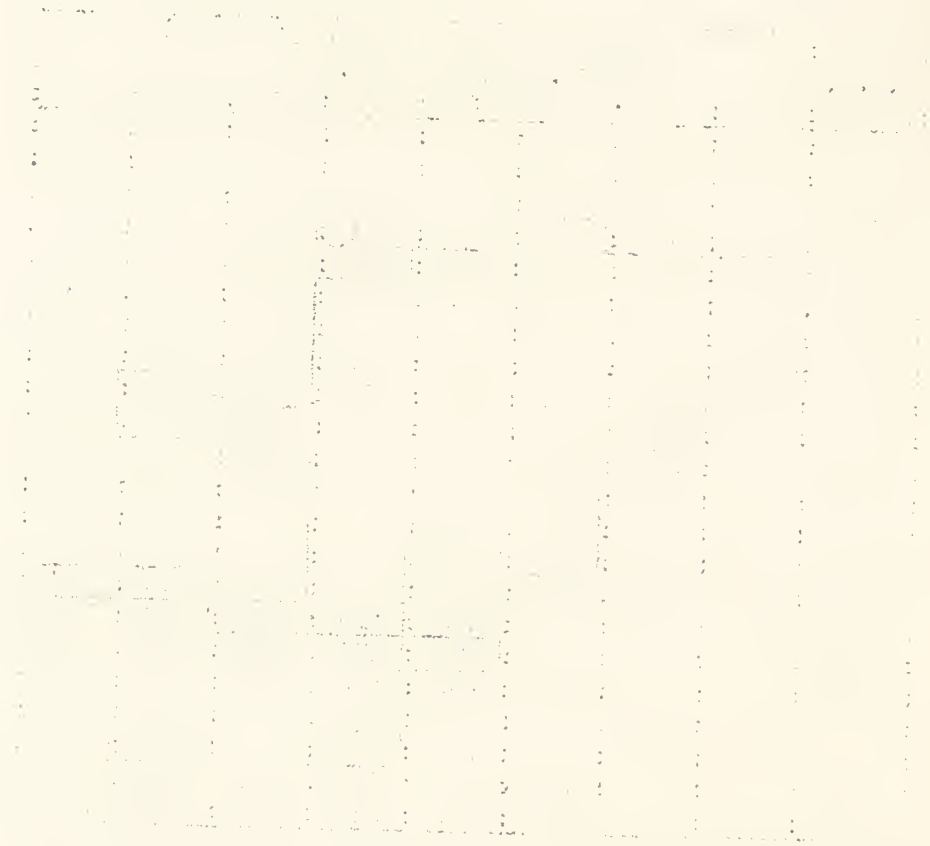
Log Volume = 2.648 (log.d.b.h.,inches) + 0.637 (log.merch.ht.,ft.) - 2.001

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees.

Log.Volume = 2.648 (log.54) + 0.637 (log.48) - 2.001
V = 2.648 (1.732) + 0.637 (1.681) - 2.001
V = 4.586 + 1.071 - 2.001 = 3.656, Antilog. is 4,529 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



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(S-Timber Surveys)

TABLE 19 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE I
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths.								
	1	1½	2	2½	3	3½	4	4½	5
10	3	4	4						
12	4	6	7	9	10				
14	6	9	11	13	15	17	19		
16	9	12	15	18	21	24	26	29	
18		17	21	25	28	32	36	39	
20		22	27	33	38	42	47	52	56
22		28	35	42	48	54	60	66	72
24		35	44	52	60	68	76	83	90
26			54	64	74	84	93	102	111
28			66	78	90	102	113	124	134
30			78	93	108	121	135	148	161
32			93	110	127	144	160	175	190
34			109	130	150	169	188	206	223
36				150	173	195	216	237	258
38				173	200	225	250	274	297
40				197	228	256	284	312	339
42				223	258	291	323	354	385
44				254	292	330	366	402	436
46				284	327	370	410	450	489
48					365	411	457	501	544
50					406	458	508	557	605

Block indicates extent of basic data (Computed by CRR
Aggregate difference: Table 2.00% low (Checked by BF
Average individual deviation: 14.91%

Based on 74 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log Volume = 2.597 (log.d.b.h., inches) + 0.783 (log.merch.ht.,ft) - 2.120

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees.

Log.Volume = 2.597 (log.54) + 0.783 (log.48) - 2.120
V = 2.597 (1.732) + 0.783 (1.681) - 2.120
V = 4.498 + 1.316 - 2.120 = 3.694, Antilog. is 4,943 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

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Table 20 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

SCARLET OAK - SITE III

Nantahala and Cherokee National Forests
Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens): by 16 ft. log lengths. ½	1	1½	2	2½	3
10	2	3	4			
12	3	5	7	8		
14	4	7	9	12	14	
16	6	9	13	16	19	22
18	7	13	17	22	26	30
20	9	16	22	28	33	38
22	12	20	28	35	42	48
24	15	25	35	43	51	59
26		31	42	52	62	72
28			50	63	75	86
30			59	74	88	101
32			69	86	103	119
34			80	100	119	137
36			91	115	136	157

Computed by BF
Checked by CRR

Block indicates extent of basic data

Aggregate difference: Table 1.1% low
Average individual deviation; 9.9%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log. Volume = 2.401 (log. d.b.h., inches) + 0.780 (log. merch. ht. ft.) - 1.851

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 54 inch trees.
Log. Vol. = 2.401 (log. 54) + 0.780 (log. 48) - 1.851
" " = 2.401 (1.732) + 0.780 (1.681) - 1.851
" " = 4.159 + 1.311 - 1.851 = 3.619, Antilog. is 4,159 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through use of additional data.

Leonard I. Barrett - Jan. 1936.

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M-1
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TABLE 21 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE I
Pisgah and Nantahala National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths									
	½	1	1½	2	2½	3	3½	4	4½	5
10	1	2	3	4						
12	2	4	5	7	8					
14	3	6	8	10	12	14	16			
16	4	8	11	14	17	20	23	26		
18		11	15	20	24	28	31	35		
20		14	20	26	31	36	42	47	52	
22			26	33	40	47	54	60	66	
24			33	42	51	59	68	76	84	92
26			41	52	63	73	84	94	104	114
28			49	63	76	89	102	114	126	138
30				76	92	107	122	137	152	166
32				90	109	127	145	163	180	197
34				106	128	150	171	192	212	232

(Computed by BF
(Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 2.31% low
Average individual deviation: 14.0%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log.Volume = 2.662 (log.d.b.h.,inches) + 0.855 (log.merch.ht.,ft.) - 2.339

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 40 inch trees:
Log.Volume = 2.662 (log.40) + 0.855 (log.48) - 2.339
V = 2.662 (1.602) + 0.855 (1.681) - 2.339
V = 4.265 + 1.437 - 2.339 = 3.363, Antilog.is 2,307 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

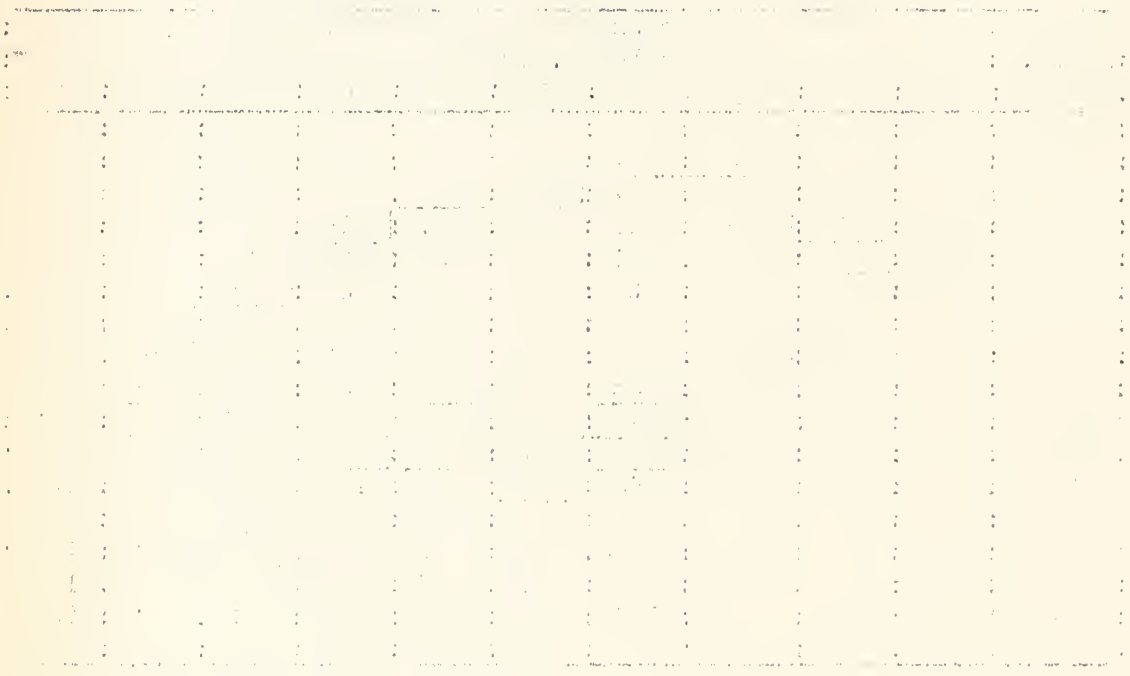

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TABLE 22 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE ASH*
Pisgah and Nantahala National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths, ½	1	1½	2	2½	3	3½	4	4½	5
10	2	3	4	5						
12	3	5	6	8	9	10				
14	5	7	10	12	14	15				
16	7	11	14	17	20	22	24	27		
18	9	15	19	23	27	30	34	37		
20		20	26	31	36	41	45	49	53	
22			33	40	47	53	58	64	69	
24				51	60	67	74	81	88	
26				64	74	84	93	101	109	
28				78	90	103	114	124	134	
30				95	110	124	137	150	162	174
32				113	131	148	164	179	193	208
34				134	156	175	194	212	229	246
36				156	181	204	226	247	267	286

(Computed by BF
(Checked by PEL

Block indicates extent of basic data
Aggregate difference: Table 0.17% high
Average individual deviation: 15.0%

Based on 68 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log.Volume = 2.745 (log.d.b.h.,inches) + 0.662 (log.merch.ht.,ft.) - 2.074

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 40 inch trees.
Log.Volume = 2.745 (log.40) + 0.662 (log.48) - 2.074
V = 2.745 (1.602) + 0.662 (1.681) - 2.074
V = 4.397 + 1.113 - 2.074 = 3.436, Antilog. is 2,729 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.

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TABLE 23 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH*
Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens) by 16 ft. log lengths. ½	1	1½	2	2½	3	3½	4	
10	2	3	4						
12	2	4	6	8					
14	4	6	9	11	13	15			
16	5	9	12	15	18	21	24	26	
18	6	11	16	20	24	27	31	34	
20	8	14	20	25	30	35	39	44	
22	10	18	25	31	37	43	49	54	
24	12	22	30	38	46	53	60	67	
26		26	36	46	55	64	72	80	
28		31	43	55	65	76	86	95	
30		37	51	64	77	88	100	112	Computed by BF
32		43	59	74	89	103	116	125	Checked by CRR

Block indicates extent of basic data

Aggregate difference: Table 1.49% low
Average individual deviation: 12.5%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

Log Volume = 2.310 (log.d.b.h.,inches) + 0.804 (log.merch.ht.,ft.) - 1.816

Table can be extended by formula as follows:
Example: Volume is desired for 3 log, 36 inch trees.
Log.Volume = 2.310 (log.36) + 0.804 (log.48) - 1.816
V = 2.310 (1.556) + 0.804 (1.681) - 1.816
V = 3.594 + 1.352 - 1.816 = 3.130, Antilog. is 1.349 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.

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M-1
(S-Timber Surveys)

TABLE 1A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Ave. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	10	2.0	9.5	1.8	
12	12	3.6	12.1	3.2	
14	16	6.7	14.9	5.7	
16	18	10.3	17.5	8.5	
18	20	15.2	20.2	12.1	
20	22	21.6	22.9	16.7	
22	22	27.6	25.5	20.6	
24	24	37.1	28.3	26.6	
26	24	45.9	30.9	31.7	
28	26	58.9	33.6	39.1	
30	26	70.6	35.8	52.4	
32	26	83.8	37.2	52.6	
34	28	104.0	37.6	64.9	
36	28	120.4	37.6	75.1	
38	28	139.2	37.6	86.9	
40	28	159.2	37.6	99.3	Computed by BF
42	28	180.7	37.6	112.8	Checked by PEL

Aggregate Difference: Table 2.6% high
Average Individual Deviation: 24.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula which was based on 71 trees.
Log.Vol. = 2.635 (log.D.B.H.,in.) + 0.721 (log.merch.ht.,ft.) - 2.062

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

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TABLE 2A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in: tens bd. ft.	(4) % Defect	(5) Net Vol. in: tens bd. ft.	
10	28	4.7	9.8	4.2	
12	30	7.8	12.8	6.8	
14	30	11.5	15.2	9.8	
16	32	16.9	17.2	14.0	
18	34	23.6	18.6	19.2	
20	34	31.0	19.8	24.9	
22	36	40.8	20.7	32.4	
24	36	51.0	21.3	40.1	
26	36	62.8	21.5	49.3	
28	38	78.3	21.8	61.2	
30	36	90.3	21.9	70.5	
32	36	106.6	21.9	83.3	
34	36	124.9	21.9	97.5	
36	34	139.0	22.0	108.4	
38	32	154.5	22.0	120.5	
40	30	168.6	22.0	131.5	
42	28	182.9	22.0	142.7	
44	28	207.5	22.0	161.8	
46	26	221.8	22.0	175.0	Computed by CRR
48	26	246.6	22.0	192.3	Checked by BF

Aggregate Difference: Table 1.47% low
Average Individual Deviation: 18.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.
Log.Vol. = 2.558 (log.D.B.H.,in.) + 0.612 (log.merch.ht.,ft.) - 1.774

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

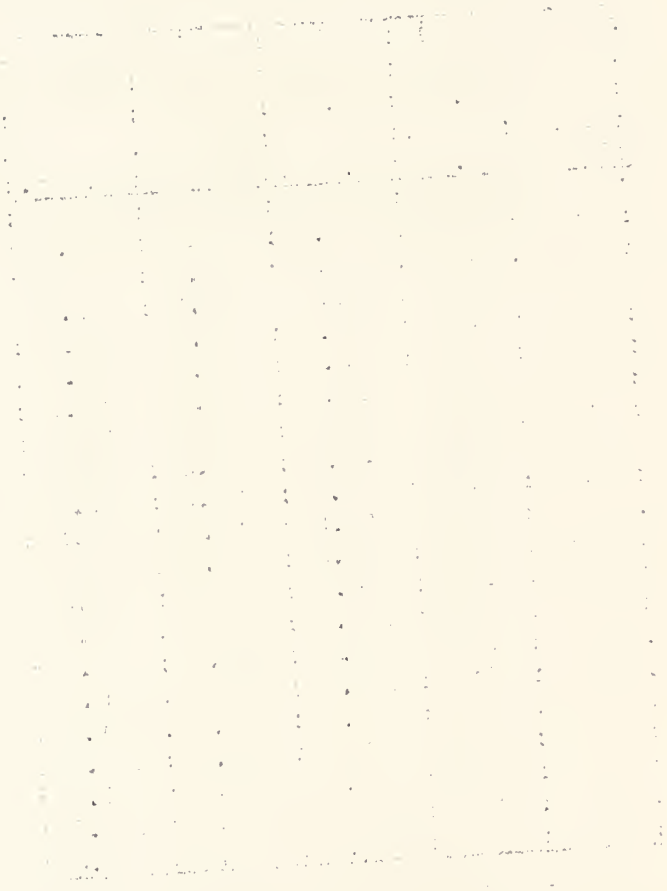

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TABLE 3A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Ave. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	14	2.6	20.4	2.1	
12	16	4.7	20.4	3.7	
14	18	7.8	20.4	6.2	
16	20	12.0	20.4	9.6	
18	20	16.4	20.4	13.1	
20	22	23.4	20.4	18.6	
22	24	32.1	20.4	25.6	
24	24	40.6	20.4	32.3	
26	26	53.4	20.4	42.5	
28	26	65.0	20.4	51.7	
30	26	78.3	20.4	62.3	
32	26	93.0	20.4	74.0	
34	26	109.9	20.4	87.5	
36	26	127.6	20.4	101.6	Computed by CRR
38	26	148.0	20.4	117.8	Checked by BF

Aggregate Difference: Table 3.46% high
Average Individual Deviation: 19.6%

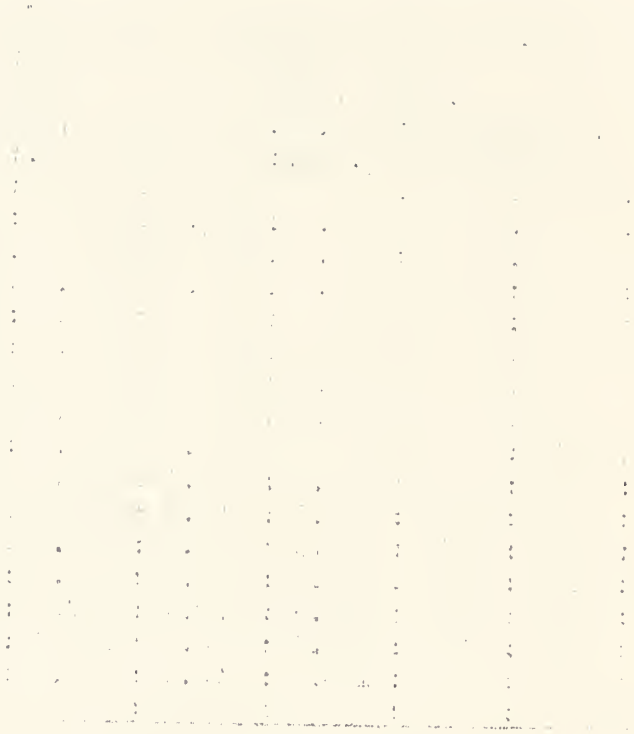
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 93 trees.
Log.Vol. = 2.688 (log.D.B.H.,in.) + 0.709 (log.merch.ht.,ft) - 2.079

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.



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(S-Timber Surveys)

TABLE 4A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Ave. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	28	4.6	0.0	4.6	
12	30	7.6	5.1	7.2	
14	32	11.6	12.9	10.1	
16	34	16.7	18.4	13.6	
18	34	22.5	21.5	17.5	
20	36	30.1	23.4	23.1	
22	36	37.9	24.5	28.6	
24	38	48.8	25.2	36.5	
26	38	59.5	25.5	44.3	
28	38	71.4	25.5	53.2	
30	38	84.4	25.5	62.9	
32	40	102.6	25.5	76.4	
34	40	119.7	25.5	89.2	
36	40	136.8	25.5	101.9	
38	40	156.7	25.5	116.7	
40	40	177.4	25.5	132.2	
42	40	200.0	25.5	149.0	
44	40	225.4	25.5	167.9	
46	40	250.6	25.5	186.7	Computed by CRR
48	40	278.0	25.5	207.1	Checked by BF

Aggregate Difference: Table 0.09% low
Average Individual Deviation: 17.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 129 trees.
Log.Vol. = 2.456 (log.D.B.H.,in.) + 0.686 (log.merch.ht.,ft.) - 1.784

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

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(S-Timber Surveys)

TABLE 5A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Ave. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	10	2.1	34.0	1.4	
12	20	5.6	30.5	3.9	
14	30	11.3	26.9	8.3	
16	34	17.4	23.1	13.4	
18	36	24.3	19.3	19.6	
20	36	31.7	15.7	26.7	
22	38	41.8	12.5	36.6	
24	38	52.2	10.5	46.7	
26	38	63.6	10.5	56.9	
28	40	79.7	10.5	71.3	
30	40	94.7	10.5	84.8	
32	40	111.2	10.5	99.5	
34	40	129.9	10.5	116.3	
36	40	149.2	10.5	133.5	
38	40	171.5	10.5	153.5	
40	40	194.4	10.5	174.0	
42	40	219.4	10.5	196.4	Computed by CRR
44	40	247.6	10.5	221.6	Checked by BF

Aggregate Difference: Table 2.87% high
Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 79 trees.
Log.Vol. = 2.500 (log.D.B.H.,in.) + 0.767 (log.merch.ht.,ft.) - 1.945

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

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(S-Timber Surveys)

TABLE 6A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	22	4.1	0.0	4.1	
12	28	7.7	0.9	7.6	
14	34	13.2	10.0	11.9	
16	38	19.9	19.0	16.1	
18	44	30.0	21.8	23.5	
20	50	43.0	22.2	33.5	
22	52	55.8	22.4	43.3	
24	54	71.2	22.6	55.1	
26	56	89.3	22.8	68.9	
28	56	106.7	23.1	82.1	
30	58	129.6	23.3	99.4	
32	58	151.5	23.5	115.9	
34	58	176.1	23.8	134.2	
36	58	201.2	24.0	152.9	
38	58	230.0	24.2	174.3	
40	60	267.7	24.5	202.1	
42	60	300.8	24.7	226.5	
44	60	337.8	24.9	253.7	
46	60	375.6	25.1	281.3	Computed by CRR
48	60	415.6	25.3	310.5	Checked by BF

Aggregate Difference: Table 1.05% high
Average Individual Deviation: 14.4%

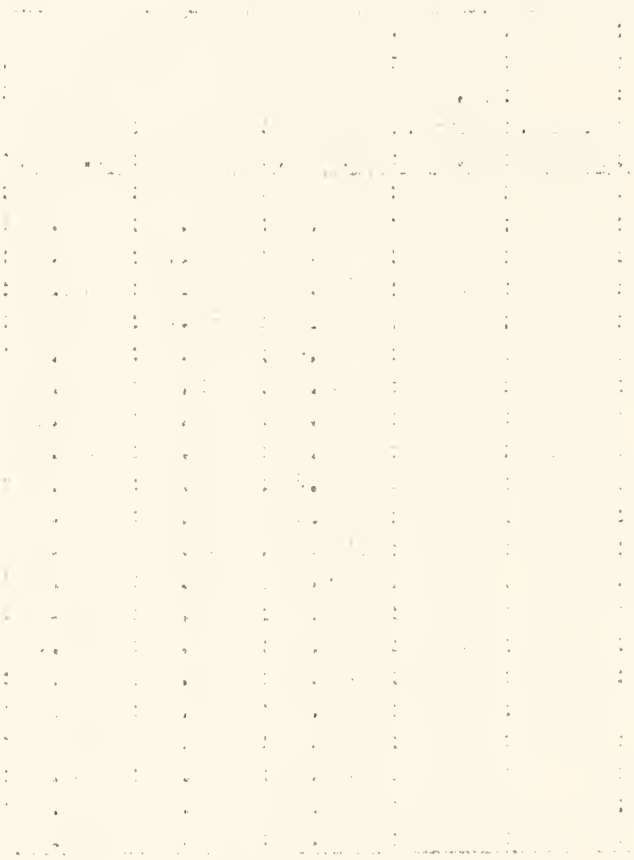
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 86 trees.
Log.Vol. = 2.417 (log.D.B.H.,in.) + 0.831 (log.merch.ht.,ft.) - 1.922

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.



RS - AP
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(S-Timber Surveys)

TABLE 7A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	24	4.6	21.4	3.6	
12	28	7.8	21.4	6.1	
14	30	11.7	21.4	9.2	
16	32	16.8	21.4	13.2	
18	34	23.0	21.4	18.1	
20	36	30.8	21.4	24.2	
22	38	40.0	21.4	31.4	
24	38	49.1	21.4	38.6	
26	40	61.5	21.4	48.3	
28	40	73.1	21.4	57.5	
30	40	86.1	21.4	67.7	
32	40	100.3	21.4	78.8	
34	42	119.9	21.4	94.2	
36	42	136.4	21.4	107.2	
38	42	155.6	21.4	122.3	
40	42	174.8	21.4	137.4	
42	42	196.2	21.4	154.2	Computed by CRR
44	42	219.6	21.4	172.6	Checked by BF

Aggregate Difference: Table 1.64% high
Average Individual Deviation: 20.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 75 trees.
Log.Vol. = 2.349 (log.D.B.H.,in.) + 0.705 (log.merch.ht.,ft.) - 1.664

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

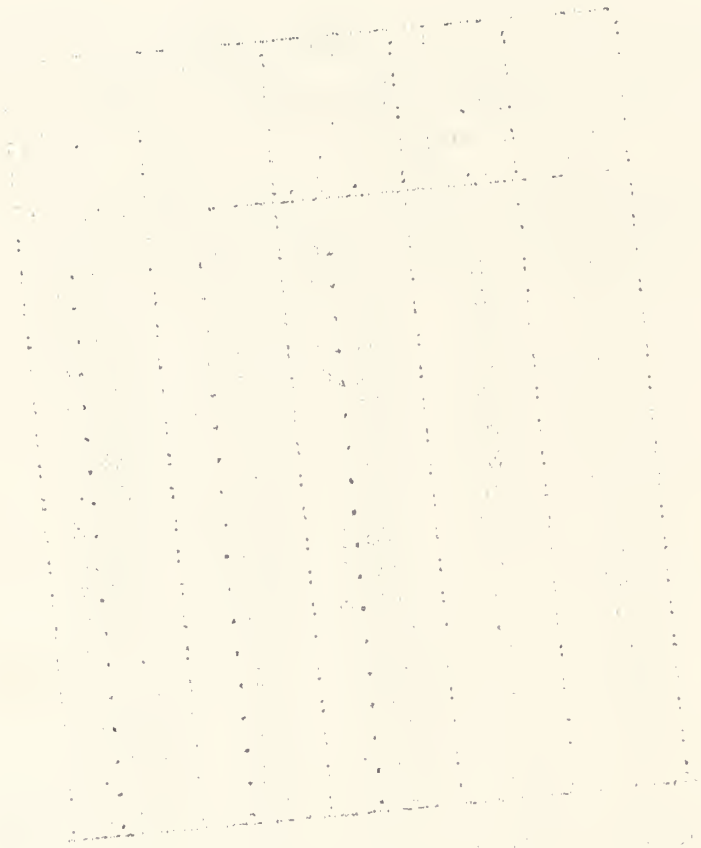

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TABLE 8A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	16	3.2	7.1	3.0	
12	20	6.0	11.0	5.3	
14	24	10.0	15.0	8.5	
16	30	16.4	18.7	13.3	
18	34	24.0	21.5	18.8	
20	40	35.3	22.8	27.3	
22	44	47.8	23.5	36.6	
24	48	63.2	24.1	48.0	
26	50	79.2	24.6	59.7	
28	50	94.6	25.1	70.9	
30	50	111.7	25.5	83.2	
32	48	126.2	26.0	93.4	
34	48	146.6	26.4	107.9	
36	46	161.8	26.8	118.4	
38	46	184.6	27.3	134.2	Computed by CRR
40	46	208.4	27.6	150.9	Checked by BF

Aggregate Difference: Table 0.66% high
Average Individual Deviation: 20.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 92 trees.
Log.Vol. = 2.402 (log.D.B.H.,in.) + 0.796 (log.merch.ht.,ft.) - 1.852

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

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TABLE 9A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	22	4.1	8.2	3.8	
12	32	8.7	8.2	8.0	
14	42	15.9	8.2	14.6	
16	48	24.4	8.2	22.4	
18	54	35.4	8.2	32.5	
20	60	49.8	8.2	45.7	
22	62	64.0	8.2	58.8	
24	64	80.5	10.1	72.4	
26	64	97.3	16.1	81.6	
28	64	115.3	22.0	89.9	
30	64	135.5	28.0	97.6	
32	64	157.4	34.1	103.7	
34	64	182.0	40.1	109.0	Computed by CRR
36	62	201.2	46.2	108.2	Checked by BF

Aggregate Difference: Table 0.30% high
Average Individual Deviation: 16.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 97 trees.
Log.Vol. = 2.326 (log.D.B.H.,in.) + 0.880 (log.merch.ht.,ft.) - 1.893

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

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TABLE 10A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III
Nantahala National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tons, bd. ft.	(4) % Defect	(5) Net Vol. in tons, bd. ft.	
10	18	3.6	8.2	3.3	
12	24	7.0	8.2	6.4	
14	30	12.0	8.2	11.0	
16	36	19.1	8.2	17.5	
18	40	27.4	8.2	25.2	
20	42	36.5	8.2	33.5	
22	46	49.1	8.2	45.1	
24	48	62.2	10.1	55.9	
26	48	75.0	16.1	62.9	
28	48	88.9	22.0	69.3	
30	48	104.2	28.0	75.0	Computed by CRR
32	48	121.1	34.1	79.8	Checked by BF

Aggregate Difference: Table 3.47% low
Average Individual Deviation: 21.6%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.
Log.Vol. = 2.311 (log.D.B.H.,in.) + 0.852 (log.merch.ht.,ft.) - 1.827

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

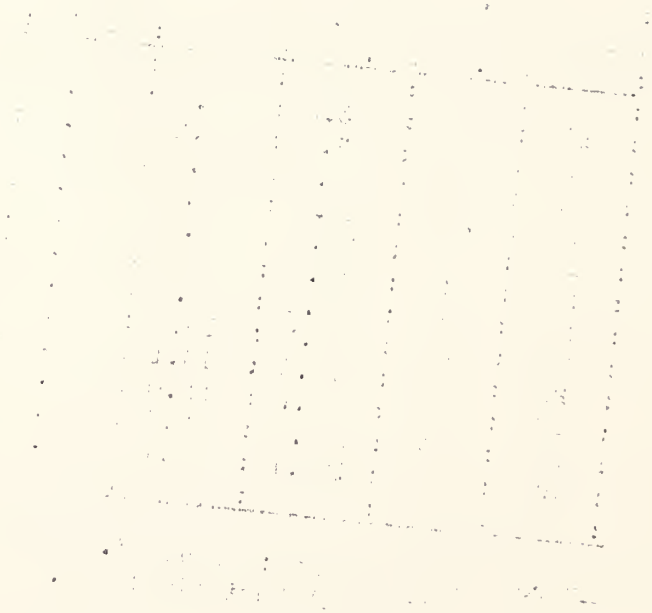

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TABLE 11. - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II
Cherokee National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	22	4.0	0.0	4.0	
12	32	8.8	2.5	8.6	
14	38	15.0	5.5	14.2	
16	44	23.6	6.0	22.2	
18	48	34.7	6.0	32.6	
20	50	47.0	6.0	44.2	
22	54	63.9	6.0	60.1	
24	56	82.4	6.0	77.5	
26	58	104.3	6.0	98.0	
28	60	129.7	6.0	121.9	
30	60	155.0	6.0	145.7	
32	62	188.0	6.0	176.7	
34	62	220.7	6.0	207.5	Computed by BF
36	62	254.5	6.0	239.2	Checked by BF

Aggregate Difference: Table 0.07% high
Average Individual Deviation: 20.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 135 trees.
Log.Vol. = 2.579 (log.D.B.H.,in.) + 0.809 (log.merch.ht.,ft.) - 2.057

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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TABLE 12A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III
Cherokee National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
10	22	3.9	0.7	3.9	
12	28	7.7	3.5	7.4	
14	34	13.6	5.4	12.9	
16	40	22.1	6.0	20.8	
18	44	32.6	6.0	30.6	
20	46	44.7	6.0	42.0	
22	46	57.4	6.0	54.0	
24	46	72.5	6.0	68.2	
26	46	89.8	6.0	84.4	
28	46	109.1	6.0	102.6	
30	46	130.9	6.0	123.0	
32	46	155.3	6.0	146.0	
34	46	183.3	6.0	172.3	Computed by BF
36	46	212.3	6.0	199.6	Checked by PEL

Aggregate Difference: Table 4.06% high
Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.
Log.Vol. = 2.650 (log.D.B.H.,in.) + 0.802 (log.merch.ht.,ft.) - 2.130

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

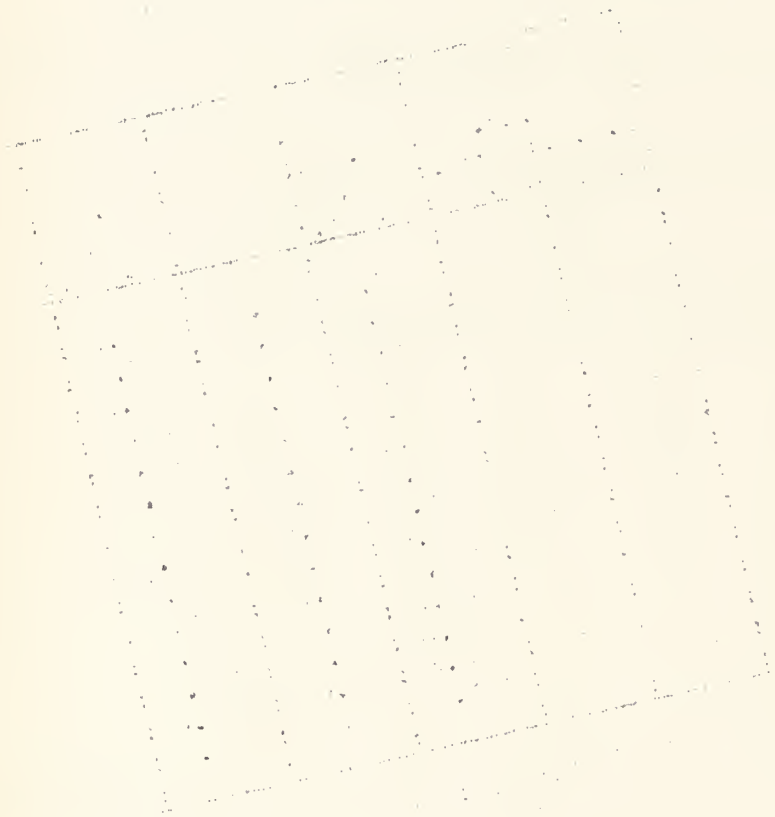

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TABLE 13.. - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II
Cherokee National Forest

Trees under 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens, bd. ft.	
8	24	2.5	13.7	2.2	
10	28	4.8	11.2	4.3	
12	32	8.2	8.5	7.5	
14	36	13.0	5.7	12.3	
16	40	19.5	3.0	18.9	
18	44	27.8	0.3	27.7	
20	48	38.4	0.0	38.4	
22	52	51.1	0.0	51.1	Computed by BF
24	54	64.9	0.0	64.9	Checked by PEL

Aggregate Difference: Table 2.44% high
Average Individual Deviation: 18.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived from substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.
Log.Vol. = 2.404 (log.D.B.H.,in.) + 0.762 (log.merch.ht.,ft.) - 1.825

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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TABLE 14A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I
Pisgah National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens, bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	10	1.9	22.4	1.5	
12	16	4.2	22.8	3.2	
14	22	7.7	23.4	5.9	
16	28	12.6	24.0	9.6	
18	34	19.2	24.5	14.5	
20	38	26.7	24.9	20.1	
22	42	35.8	25.4	26.7	
24	48	48.5	26.0	35.9	
26	50	60.1	26.5	44.2	
28	50	70.9	27.0	51.8	
30	50	83.0	27.5	60.2	
32	50	96.0	28.0	69.1	
34	50	110.7	28.5	79.2	
36	50	125.2	29.2	88.6	
38	52	146.3	29.7	102.8	
40	52	164.2	30.2	114.6	
42	52	183.2	30.8	126.8	
44	52	204.4	31.3	140.4	
46	52	225.6	31.8	153.9	
48	52	247.9	32.4	167.6	
50	52	272.2	33.0	182.4	
52	52	297.4	33.5	197.8	
54	52	323.1	34.0	213.2	
56	52	351.0	34.5	229.9	
58	52	379.6	35.0	246.7	Computed by CRR
60	52	410.5	35.5	264.8	Checked by BF

Aggregate Difference: Table 2.53% high
Average Individual Deviation: 16.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 214 trees.
Log.Vol. = 2.263 (log.D.B.H.,in.) + 0.791 (log.merch.ht.,ft.) - 1.767

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

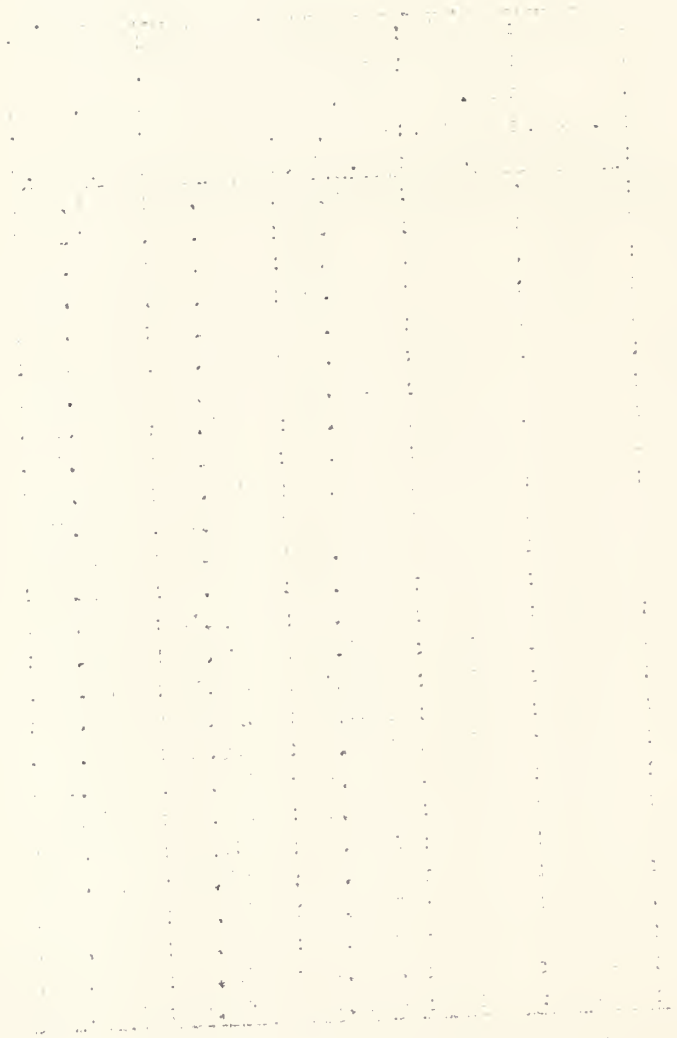

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TABLE 15A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II
Pisgah National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	6	1.2	0.0	1.2	
12	14	3.7	2.0	3.6	
14	24	8.0	9.8	7.2	
16	30	12.8	15.0	10.9	
18	34	18.6	18.8	15.1	
20	36	24.8	21.5	19.5	
22	38	32.2	23.8	24.5	
24	40	41.1	25.8	30.5	
26	40	49.7	27.8	35.9	
28	40	59.1	29.6	41.6	
30	40	69.5	31.0	48.0	
32	40	81.0	32.0	55.1	
34	40	93.7	32.6	63.2	
36	38	102.7	33.0	68.8	
38	38	117.0	33.3	78.0	
40	36	126.7	33.4	84.4	
42	36	142.0	33.5	94.4	
44	34	152.7	33.5	101.5	
46	34	169.2	33.5	112.5	
48	32	178.7	33.5	118.8	Computed by CRR
50	32	197.0	33.5	131.0	Checked by BF

Aggregate Difference: Table 1.52% low
Average Individual Deviation: 17.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 91 trees.
Log.Vol. = 2.354 (log.D.B.H.,in.) + 0.725 (log.merch.ht.,ft.) - 1.796

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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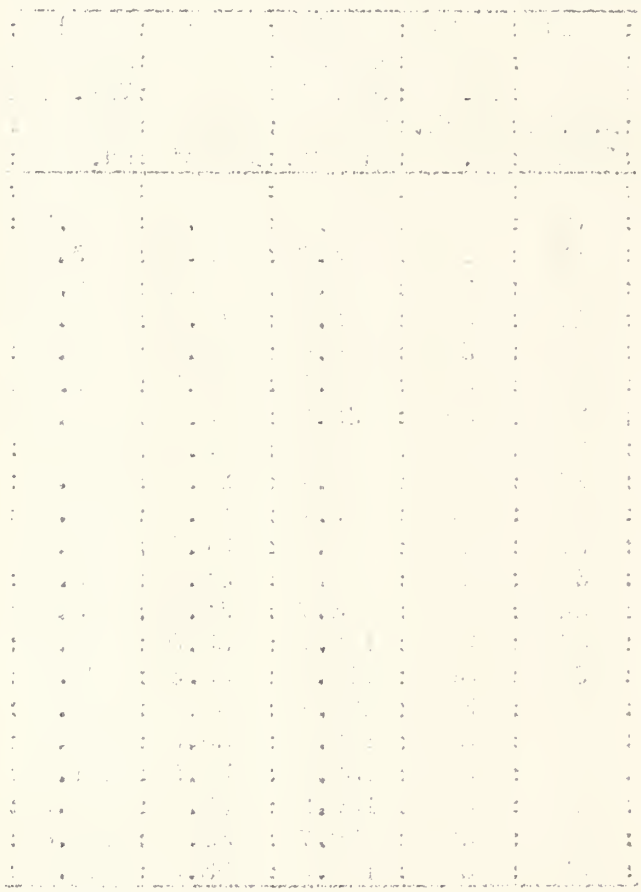

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TABLE 16A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I
Pisgah National Forest

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	18	3.4	0.0	3.4	
12	22	5.9	6.4	5.5	
14	26	9.2	13.1	8.0	
16	30	13.6	18.6	11.1	
18	34	19.0	22.7	14.7	
20	38	25.8	25.3	19.3	
22	42	33.9	26.3	25.0	
24	44	42.4	26.7	31.1	
26	48	53.5	27.2	38.9	
28	50	64.5	27.5	46.8	
30	52	77.0	28.0	55.4	
32	52	88.6	28.5	63.3	
34	52	101.6	28.8	72.3	
36	52	114.6	29.2	81.1	
38	50	126.0	29.7	88.6	
40	48	137.1	30.0	96.0	
42	48	152.4	30.4	106.1	
44	46	164.7	30.5	114.5	
46	44	176.1	30.5	122.4	Computed by CRR
48	44	192.8	30.5	134.0	Checked by BF

Aggregate Difference: Table 0.79% low
Average Individual Deviation: 24.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.
Log.Vol. = 2.189 (log.D.B.H.,in.) + 0.653 (log.merch.ht.,ft.) - 1.467

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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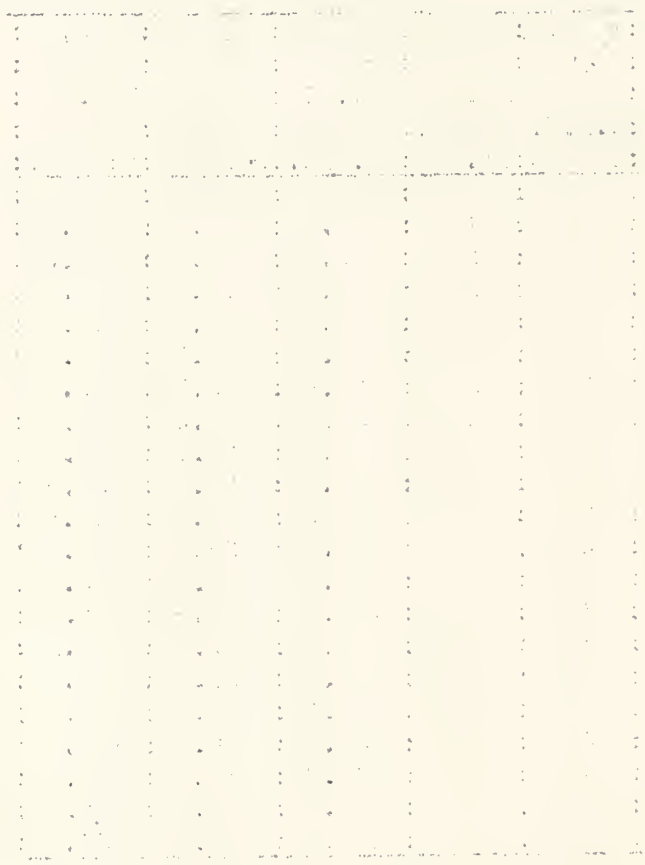

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M-1
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TABLE 17A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I
Pisgah National Forest

Trees under 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	22	3.4	4.8	3.2	
12	26	5.9	5.1	5.6	
14	28	8.7	5.5	8.2	
16	32	13.0	5.9	12.2	
18	36	18.5	6.3	17.3	
20	38	24.4	6.6	22.8	
22	42	32.6	7.0	30.3	
24	44	41.0	7.5	37.9	
26	46	50.6	7.5	46.8	
28	50	63.6	7.5	58.8	
30	52	76.4	7.5	70.7	
32	54	90.6	7.5	83.8	
34	58	110.2	7.5	101.9	Computed by CRR
36	60	127.7	7.5	118.1	Checked by BF

Aggregate Difference: Table 1.25% high
Average Individual Deviation: 19.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.
Log.Vol. = 2.142 (log.D.B.H.,in.) + 0.875 (log.merch.ht.,ft.) - 1.782

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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TABLE 18A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE II
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	10	1.9	1.3	1.9	
12	16	4.2	6.7	3.9	
14	18	6.8	12.0	6.0	
16	22	11.0	17.4	9.1	
18	26	18.3	22.5	14.2	
20	28	23.2	25.1	17.4	
22	30	31.0	25.5	23.1	
24	32	40.9	25.0	30.7	
26	34	52.6	24.6	39.7	
28	36	66.2	24.2	50.2	
30	38	82.5	23.7	62.9	
32	38	97.8	23.2	75.1	
34	40	119.1	22.7	92.1	
36	42	142.2	22.3	110.5	
38	42	164.6	21.8	128.7	
40	44	194.0	21.4	152.5	
42	46	226.8	21.0	179.2	Computed by CRR
44	46	257.6	20.5	204.8	Checked by BF

Aggregate Difference: Table 0.49% high
Average Individual Deviation: 21.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.
Log.Vol. = 2.648 (log.D.B.H.,in.) + 0.637 (log.merch.ht.,ft.) - 2.001

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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(S-Timber Surveys)

TABLE 19A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE I
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tons bd. ft.	(4) % Defect	(5) Net Vol. in tons bd. ft.	
10	16	2.6	0.0	2.6	
12	26	6.2	0.6	5.8	
14	36	11.8	5.2	11.2	
16	44	19.6	9.8	17.7	
18	50	29.4	14.4	25.2	
20	54	41.2	18.8	33.5	
22	56	54.2	20.7	43.0	
24	58	70.0	20.7	55.5	
26	60	88.6	20.5	70.4	
28	62	109.9	20.1	87.8	
30	62	131.5	19.6	105.7	
32	64	159.6	19.3	128.8	
34	64	187.5	18.9	152.1	
36	64	216.3	18.5	176.3	
38	64	249.5	18.0	204.6	
40	64	284.4	17.7	234.1	
42	66	330.7	17.3	273.5	
44	66	375.2	16.9	311.8	
46	66	420.1	16.5	350.8	
48	66	468.1	16.0	393.2	Computed by CRR
50	66	520.4	15.6	439.2	Checked by BF

Aggregate Difference: Table 1.16% high
Average Individual Deviation: 19.0%

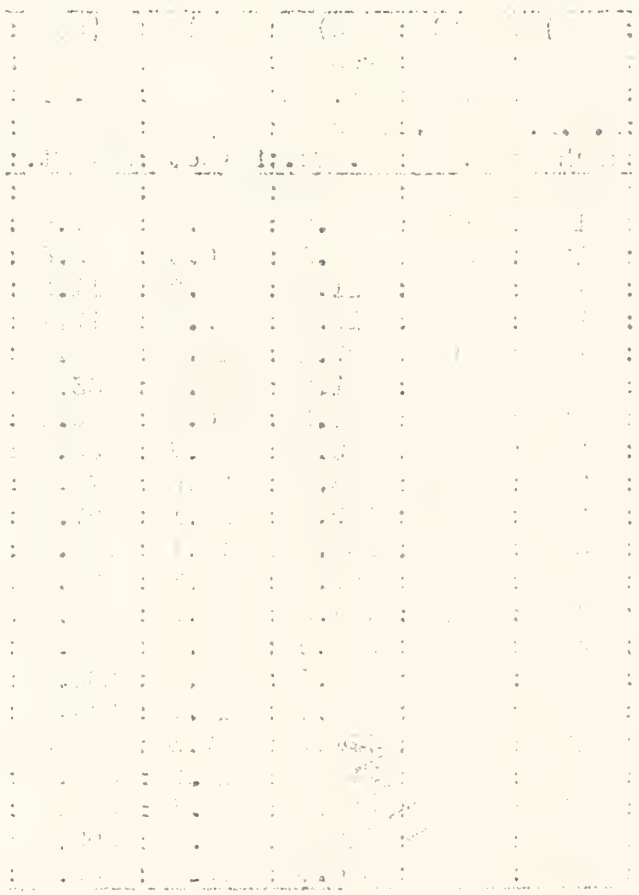
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 74 trees.
Log.Vol. = 2.597 (log.D.B.H.,in.) + 0.783 (log.merch.ht.,ft.) - 2.120

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.



RS - LP
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(S-Timber Surveys)

TABLE 20A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SCARLET OAK - SITE III
Nantahala and Cherokee National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tons bd. ft.	(4) % Defect	(5) Net Vol. in tons bd. ft.	
10	12	2.4	14.1	2.1	
12	14	4.3	17.3	3.6	
14	16	6.9	20.4	5.5	
16	20	11.3	23.7	8.6	
18	22	16.1	27.0	11.8	
20	24	22.3	30.2	15.6	
22	26	29.8	33.4	19.8	
24	30	41.0	36.7	26.0	
26	32	52.5	40.0	31.5	
28	34	65.7	43.1	37.4	
30	36	81.0	46.5	43.3	
32	38	98.7	49.8	49.5	
34	38	114.6	53.0	53.9	Computed by BF
36	38	131.0	56.4	57.1	Checked by PEL

Aggregate Difference: Table 3.07% high
Average Individual Deviation: 22.0%

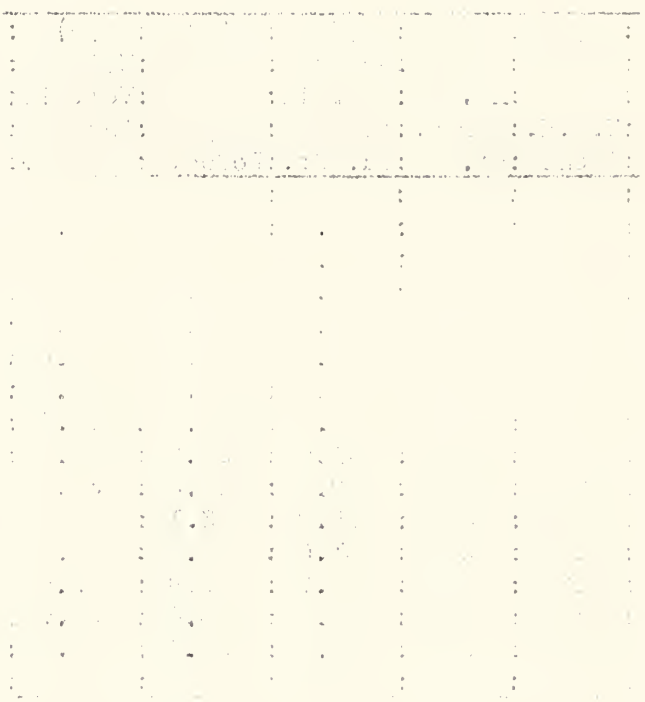
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.
Log.Vol. = 2.401 (log.D.B.H.,in.) + 0.780 (log.merch.ht.,ft.) - 1.851

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936



RS - AP
M-1
(S-Timber Surveys)

TABLE 21A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE I
Pisgah and Nantahala National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in: tons bd. ft.	(4) % Defect	(5) Net Vol. in: tons bd. ft.	
10	30	3.9	6.6	3.6	
12	32	6.6	7.5	6.1	
14	36	11.0	8.5	10.1	
16	40	17.2	9.8	15.5	
18	42	24.6	11.6	21.7	
20	46	35.1	14.3	30.1	
22	48	46.8	18.1	38.3	
24	50	61.3	22.7	47.4	
26	52	78.6	29.4	55.5	
28	52	95.5	39.0	58.3	
30	52	114.8	50.1	57.3	
32	52	136.2	61.3	52.7	Computed by BF
34	52	160.7	72.5	44.2	Checked by PEL

Aggregate Difference: Table 0.62% low
Average Individual Deviation: 22.9%

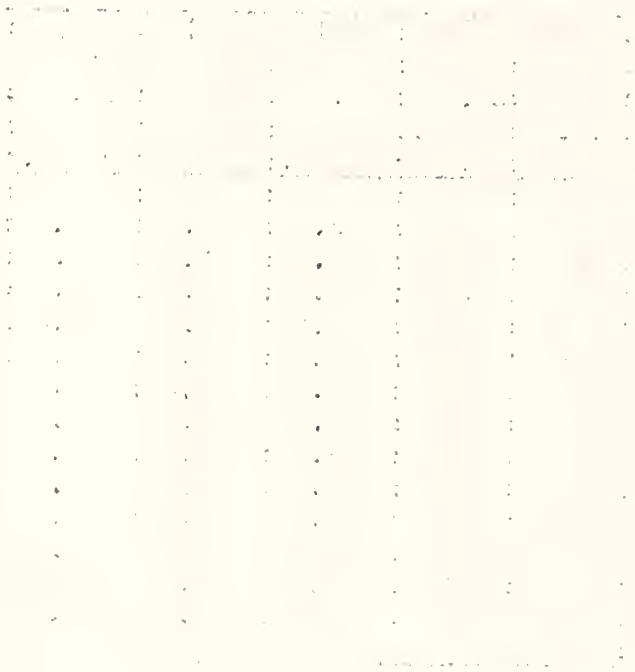
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.
Log.Vol. = 2.662 (log.D.B.H.,in.) + 0.855 (log.merch.ht.,ft.) - 2.339

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.



RS-AP
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(S-Timber Surveys)

TABLE 22A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE ASH*
Pisgah and Nantahala National Forests

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	22	3.6	0.0	3.6	
12	26	6.6	7.0	6.1	
14	32	11.7	15.1	9.9	
16	38	18.9	19.0	15.3	
18	42	27.9	20.2	22.3	
20	46	39.6	20.2	31.6	
22	48	52.8	20.2	42.1	
24	50	68.9	20.2	55.0	
26	52	88.2	20.2	70.4	
28	54	110.8	20.2	88.4	
30	56	137.1	20.2	109.4	
32	56	163.7	20.2	130.6	
34	58	198.6	20.2	158.5	Computed by BF
36	58	231.2	20.2	184.5	Checked by BF

Aggregate Difference: Table 5.29% high
Average Individual Deviation: 19.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 68 trees.
Log.Vol. = 2.745 (log.D.B.H.,in.) + 0.662 (log.merch.ht.,ft.) - 2.074

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.

RS - AP
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(S-Timber Surveys)

TABLE 23A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH*
Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old
Utilization: 1 foot stump and merchantable top

(1) D.B.H. Inches	(2) Av. Merch. Ht.	(3) Gross Vol. in tens bd. ft.	(4) % Defect	(5) Net Vol. in tens bd. ft.	
10	10	2.0	0.0	2.0	
12	18	4.8	6.0	4.5	
14	24	8.1	12.2	7.1	
16	28	13.4	18.5	10.9	
18	30	18.6	24.6	14.0	
20	30	23.8	29.7	16.7	
22	32	31.2	31.0	21.5	
24	32	38.2	31.0	26.4	
26	34	48.3	31.0	33.3	
28	34	57.3	31.0	39.5	
30	36	70.3	30.9	48.6	Computed by CRR
32	36	81.6	30.8	56.5	Checked by BF

Aggregate Difference: Table 0.62% high
Average Individual Deviation: 32.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.
Log.Vol. = 2.310 (log.D.B.H.,In.) + 0.804 (log.merch.ht.,ft.) - 1.816

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.